An Address
ON
THE WOUNDED IN THE PRESENT WAR.

Delivered before the Royal Medical and Chirurgical Society on May 22nd, 1900,

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MR PRESIDENT AND GENTLEMEN,—If in deference to your wishes I must make some observations on matters of surgical interest in connexion with the war I fear I may somewhat repeat myself, as I have already said in the pages of THE LANCET almost everything I desired to say upon the subject, and in the last of my letters I formulated with some care the conclusions at which I had arrived after a large experience and after seeing an immense number of wounded in the hospitals of South Africa. As there are as yet but few statistical returns available it is not possible to formulate any precise conclusions, and the most exact analysis of the results of gunshot injuries similar to those inflicted in the present war is to be found in a communication made by Professor Nancrede of the University of Michigan to the last meeting of the American Surgical Association. In this interesting paper he discusses the outcome of 1500 cases of gunshot wounds he had himself observed during the war in Cuba in 1898. These were inflicted by Mauser and Krag-Jörgensen bullets,[1] and the conclusions he arrives at strikingly resemble my own as stated in THE LANCET of April 28th, 1900. In general character the Lee-Metford and Mauser wounds—for there is no essential difference between them—as compared to those I have seen before are extraordinarily mild. An uncomplicated flesh wound in any part of the body heals very rapidly and usually occasions the most trifling amount of inconvenience, and wounds of the chest and abdomen and of joints, as well as gunshot fractures of the bones, are recovered from in a manner which previously would not have been considered possible. This favourable result depends in the foremost place, in my opinion, on the small size of the projectile and on its high velocity and aseptic character. The nature of the injury is rather that of an incised than a contused or lacerated wound; the openings of entrance and exit are very small and tend very rapidly to close up. The absence of explosive effects and the great infrequency with which articles of clothing or any foreign material are carried into the tissues are noteworthy. This latter occurrence was very common previously, but now it is very rare. In fact, I never saw an instance. As at the very ordinary firing range of 1000 yards the initial velocity is already diminished one-half deflection may sometimes occur, but this does not happen frequently, and the bullet may lodge for the same reason. Lodgment, indeed, occurs in a much larger proportion of the cases than was to be expected judging from the results of experimental trials. None of that appalling destructiveness attributed to the new projectile which experiment made on the dead body and on animals appeared to forecast was seen. Nor was this feature witnessed in the Cuban war where the wounds presented precisely similar features and healed with the same facility as they did in South Africa, not only flesh wounds, but cases of fracture and of injuries involving all the great visceral cavities.

In speaking of perforating abdominal wounds I may mention that I had ventured to express a very decided opinion before going to the seat of war—an opinion founded on previous experience of the conditions met with in actual warfare—that the prospects of successful abdominal surgery were anything but bright. I did not then fully realise the comparative immunity which abdominal wounds caused by the Mauser and Lee-Metford bullets enjoy, but my recent experience, as well as that of other surgeons, serves to strongly confirm the opinion I had formed beforehand. Many enthusiastic young officers in the Royal Army Medical Corps and others, like Mr. Treves, went out full of hope of performing successful abdominal operations. I well remember that surgical genius, Marion Sims, full of the same hope on the eve of the battles of 1870. They had determined—and previous teaching largely justified the conclusion—to operate in those cases where the abdomen was without doubt traversed by a bullet and where the sufferer seemed in a fit condition to be operated upon. This opinion, however, must be changed. I believe I have seen more than 50 cases of injury of this kind recover without any interference beyond antiseptic occlusion, and in many instances not even that was accomplished. We know that comparatively few cases recovered after an operation during this war, and none, it is stated by Nancrede, recovered after operation during the Cuban war. I know of at least one case in which it may be fairly urged that recovery took place in spite of operation. It was that of a young man shot at a distance of 800 yards by a Lee-Metford bullet which passed through the cæcum.[2] The projectile entered behind through the right sacro-iliac synchondrosis and emerged in front half way between the right anterior superior iliac spine and the ninth costal cartilage. The abdomen was opened eight hours after, but the greatest difficulty was experienced in finding the intestinal wound. There was no sign of extravasation and the seat of injury was only discovered after much handling and squeezing of the bowel. The openings were readily closed by a couple of Lembert's sutures, the abdomen was washed out, and the patient recovered. I have no doubt that this man would have recovered without surgical interference, and other cases bearing on this point might be quoted (Fig. 1).

I think the rule in future must be to give patients so wounded a chance of recovery without operation. Evidence of serious hæmorrhage or of commencing peritonitis would indicate operation, and while there are some injuries so severe that no interference is possible, in simple uncomplicated cases of abdominal bullet-wound the patient enjoys, in my opinion, the best chance of recovery by being left alone. In the field hospitals the conditions are inimical to success and to succeed at all these operations must be performed in an early stage. The pressure after an action is at its greatest; the large number of wounded overtax the energies and resource of the surgeons. There are never enough, and there never can be enough, and time and means fail for the performance of operations necessarily involving an hour or two in their performance. In many places in South Africa the surrounding conditions were most unfavourable; the atmosphere was reeking with putrid dust, and the flies and other difficulties in maintaining asepsis rendered a successful abdominal operation impossible.

Nancrede goes so far as to say that an operation will too often determine the death of some patients who might otherwise have recovered and this I believe is only too likely to happen. He has further stated that all the cases operated upon during the Cuban war died, while he saw a number who had recovered without operation, and in the report of the Surgeon-General of the United States of America it is recorded that of 44 penetrating abdominal wounds 30 died and that operative interference was only resorted to in four of them. I can only explain this considerable immunity, which I believe was much greater in our own army, by the frequently empty state of the intestinal tract at the time of injury, the smallness of the aperture in the bowel made by the ball, its tendency to glue up or close up by adhesions without extravasation, and the early application of an antiseptic first dressing. In illustration I might refer again to an astonishing instance[3] of patient courage and endurance exhibited by a wounded army medical officer on the field at Colenso. Captain ——, R.A.M.C., was shot at rather a short range through the abdomen while he was in the act of dressing a wounded man. He was in a stooping position while thus engaged, near the front of the fighting line, and was hit in the early afternoon. It so happened that he had to lie where he had been wounded for 12 hours before he was picked up. He was able to discover almost directly where the bullet had

[1] Weight of bullets.—Krag-Jörgensen, 15·40 grammes; Lee-Metford, 13·84 grammes; Springfield, 14·23 grammes; German Mauser, 14·69 grammes; Argentine Mauser, 13·84 grammes; Belgian Mauser, 14·10 grammes; Spanish Mauser, 10·00 grammes; Turkish Mauser, 14·00 grammes.—From "Las Projectilas das Armas de Guerra," par Nimier et Laval. The Intelligence Department say that there is another Springfield bullet of 4·5 calibre weighing 32·38 grammes but that it was not used in the Cuban war.

[2] Vide THE LANCET, Jan. 6th, 1900.

[3] THE LANCET, March 3rd, 1900, p. 643.

entered in front through the rectus muscle about one inch below the right costal margin and one and a half inches from the median line, but he could not ascertain where it had emerged behind, which was through the right sacro-iliac-synchondrosis. Although he believed himself to be mortally injured, yet he tried to finish the dressing of his wounded comrade, and only desisted because he became giddy and faint and had to lie down. He had had nothing to eat or drink for 10 hours previously, and then only a little porridge, and he thought his best chance was to remain absolutely still, and this he did all the afternoon and on into the night until the stretcher-bearers arrived 12 long and weary hours afterwards. All this time he was watching and waiting for the certain advent of symptoms of peritonitis. None to his surprise came, but he told me that the distress, mainly pain in the back, from the constrained position was terribly hard to bear. During the night some passing Boers offered him water to drink, yet, consumed as he was with a raging thirst, he declined it, and begged two similarly wounded soldiers lying near him, shot also through the abdomen, to refuse likewise. They did not, however, show the same resolution; they drank copiously and one died beside Captain —— during the night after great agony, and the other the day afterwards in hospital. Words fail me to describe adequately the horror of such a situation or the courage and heroic endurance of such a man. He made a complete recovery, as truly he deserved to do (Fig. 2).

In the case of chest wounds the principle of non-interference and antiseptic occlusion may be most strongly affirmed. A large proportion of these cases recovered, often without noteworthy symptoms. In one instance I knew a man to run 800 yards after being shot through the chest. A Boer shot through the lung smoked his pipe comfortably the next day and on the following one insisted on going home to his wife. I might tell of many astonishing instances of recovery after gunshot passing through one and in some instances both lungs. The number of these cases which returned to duty is very remarkable. During the Cuban war the Surgeon-General of the United States of America states that there were 53 penetrating wounds of the thorax and that 30 of the men so injured returned to duty.

There has not been the free bleeding that was expected. Hæmothorax occurred occasionally and when urgent was, as a rule, permanently relieved by tapping. In a few empyema took place. In the Franco-German war the heavy bullets then employed caused a death-rate, exclusive of killed, of from 50 to 60 per cent., and hæmorrhage and empyema were very frequent. Nancrede mentions a case of recovery in which it was believed the heart had been traversed. I have seen three instances in which it was impossible to understand how the heart could have escaped unless the bullet were deflected who nevertheless made a good recovery.

1. In the case of a bombardier, Royal Horse Artillery, who was wounded on Feb. 16th,[4] the bullet entered over the third rib on the left side close to the sternum and one inch from its margin, pretty closely over the left auricle, I should suppose. It emerged through the tenth interspace on the same side, two inches external to the spine. If the heart and pericardial sac escaped it must have been a very near thing. When I saw the man five days afterwards he was in rather a bad way from pneumonia but he was alive and has, I trust, since recovered (Fig. 3).

2. In another case[5] the bullet entered the third interspace two inches vertically above the left nipple. It emerged through the eighth left interspace in the posterior axillary line. There was slight hæmoptysis for a few days but no other symptoms of any kind, and when I saw the man he was well (Fig. 4).

3. In a third case[6] the bullet entered the second interspace on the left side three inches from the margin of the sternum. It emerged through the fifth left interspace in the posterior axillary line. There was some hæmothorax, but he was free when I last saw him from all urgency and well on the way to complete recovery (Fig. 5).

4. This man was wounded at 800 yards. The bullet passed through the sternum in the middle line about two inches below the notch and therefore close to the junction of the first and second bones. It emerged through the right upper arm close to the posterior axillary fold. How, for instance, did the innominate escape, for it would certainly seem to be exactly in the track?

5. In this case the bullet apparently passed through the right sterno-clavicular joint and emerged about the middle of the spine of the left scapula. It would appear to have passed amidst the great vessels arising from the heart and the other not unimportant structures in this region without causing any serious hurt. The wounds healed by first intention and the man when I saw him was quite well (Fig. 6).

There was nothing in any one of these cases to indicate that the bullet had not traversed a perfectly direct line from the point of entrance to the point of exit.

Uncomplicated gunshot fractures, even of the femur, rarely require amputation. A few amputations have been performed when complications arose, generally gangrene arising from arterial damage or because of septic infection, and some cases have gone wrong on account of prolonged transport, which is the worst thing that can happen to a fractured femur. If we take gunshot injury of the joints, and consider the injury of the knee-joint as an example, there can be no doubt that antiseptic occlusion should always be practised in the first instance unless there be some very serious complication. I have seen a large number of cases recover with free joint movement. In a few there has been some delay in recovery because of hæmarthros, but I do not recall any case in which amputation was performed for a simple perforating wound of the knee. Septic infection may of course have taken place in some cases, of which I do not happen to have heard, and an operation have been needful in consequence.

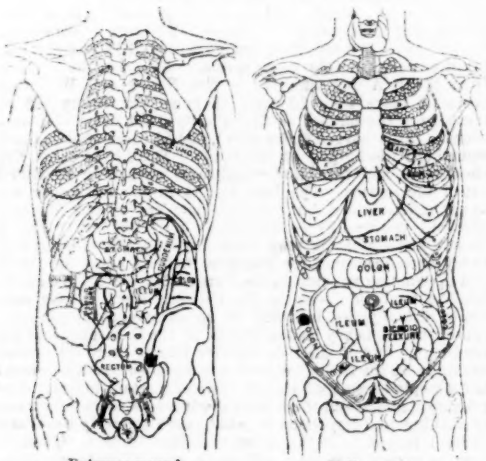
There have been very few formal resections practised. I only saw one. It was in a German ambulance at Jacobsdal and the result did not promise well. In the Franco-German war Nussbaum, Hüter, and others performed many excisions, but the results were uniformly bad in the case of the knee. We all remember the great interest excited by the results obtained by Bergmann and Reyher in the treatment of knee cases during the Russo-Turkish war and the excellent record they obtained, so different from all previous experience. Now, it would seem that good results can be assured, almost as a matter of course, where primary occlusion is obtained at an early period. Similar results were seen in the Cuban campaign. Of 18 cases of wounds of the knee 14 returned to duty and one died. It is certainly not so much a matter of climate, as has frequently been urged. The climate in Cuba is very bad. Some 75 per cent. of the entire force suffered from fever of some kind, and there was not only an epidemic of typhoid fever but one of yellow fever as well.

Gentlemen, I must not weary you, but there are one or two other points to which, with your permission, I should like to draw your attention. I have said that the number of lodged bullets is considerable, and this is a surprising and unexpected result, especially when we consider that the muzzle velocity of the ball is about 1500 miles an hour. Nancrede estimates lodgment as occurring in 10 or 15 per cent. and I should think it was even greater. What, then, ought to be done in cases of lodgment of the projectile? It should be mentioned that, as a rule, a skiagram is taken in all cases of lodged projectiles and of fractures; but the radiograph affords no certain guide, although, as a rule, it gives great assistance; it may be difficult to interpret and on some occasions fails to serve. If the bullet be causing irritation, producing pain, or is likely from its position to be a source of future disturbance, certainly let it be excised, if this can be done without undue risk. But in many cases it causes no inconvenience of any kind, and I feel sure that in these it should be left alone, unless perhaps when lying immediately beneath the skin. John Hunter urged this view, and so have many others. One of Hunter's illustrious pupils, John Abernethy, once commenced his lecture in these words: "Sir Ralph Abercrombie received a bullet in the thigh, the surgeons groped, and they groped, and they groped, and Sir Ralph Abercrombie died." One may assume, I think, that not one of Abernethy's pupils who heard that lecture ever forgot it.

I myself have known two cases where death from hæmorrhage followed ineffective and protracted attempts to remove a projectile. I was recently present at another case of attempted removal of a bullet which had apparently been exactly localised by the x rays. The bullet was not found and the operation had to be abandoned on account of the very evident risk which further search would entail, and the pleural sac narrowly escaped being incised. I asked why the operation had been undertaken and was told that the man wished the bullet taken out; there was no other reason for its removal. I wish to mention this because I see that this hunting after bullets is once more recommended on the

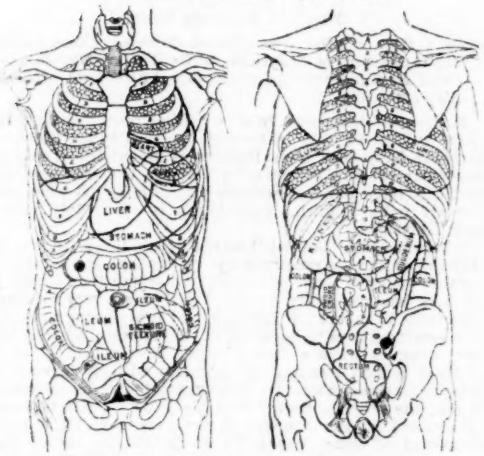
[4] THE LANCET, April 21st, 1900, p. 1153.
[5] THE LANCET, April 21st, 1900, p. 1155.
[6] THE LANCET, April 21st, 1900, p. 1156.

FIG. 1.—*Bullet Wound of Abdomen.*



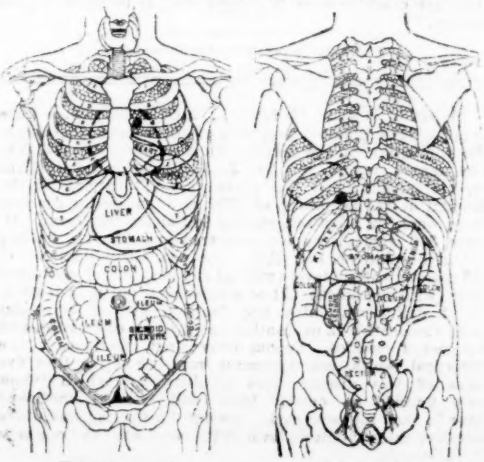
Entrance wound. Exit wound.

FIG. 2.—*Bullet Wound of Abdomen.*



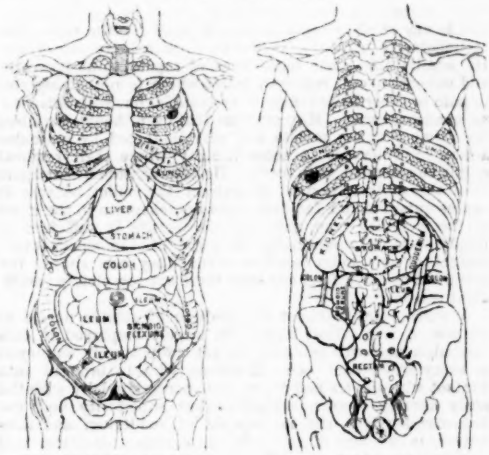
Entrance wound. Exit wound.

FIG. 3.—*Wound of Chest (?) involving Heart.*



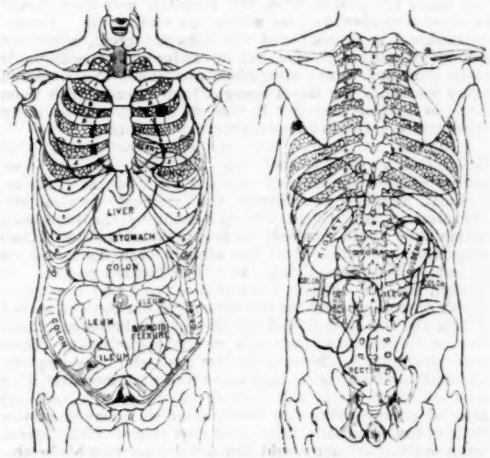
Entrance wound. Exit wound.

FIG. 4.—*Chest Wound.*



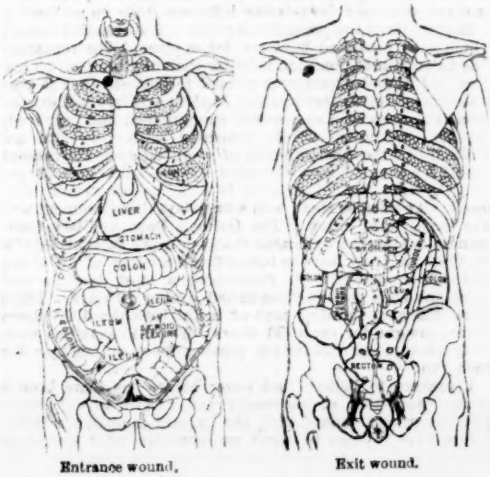
Entrance wound. Exit wound.

FIG. 5.—*Wound of Chest.*



Entrance wound. Exit wound.

FIG. 6.—*Wound of Chest.*



Entrance wound. Exit wound.

authority of Sir William Stokes. In a communication published in the *British Medical Journal* of April 28th, from Mooi River, he writes that among the many operations which are of daily occurrence operations for the extraction of bullets, or of their fragments, form a large proportion. He admits that some authorities of repute think it unwise and unnecessary to remove a bullet which is not giving rise to pain or other inconvenience or trouble, but with this view he cannot concur. He considers that even though harmless for a time they are mobile and may be forced by muscular action or otherwise to some locality where their removal might be attended with peril. He also considers that apart from this it is important to extract the bullet because it causes quietude and freedom from apprehension in the mind of the wounded man, and that this reason is sufficient to justify removal, especially in view of the unconcealed delight of our brave soldiers when they are shown the extracted bullet. I submit that these are completely insufficient reasons.

Another point is about the position of female nurses at the seat of war. They have been largely employed in this campaign and will probably be yet more largely employed in every subsequent one. Everyone who is brought into contact with the trained nurse, and more especially with the army nursing sisters, recognises her superiority and the immense services she is capable of rendering, and does render, in a spirit of complete self-sacrifice, devotion, and intelligence. It is possibly a question on which opinions may differ, but to me it seems that a moving army in the field with an enemy confronting it is not a place for women. The place for women is in the hospitals and they should never be permitted to pass within the zone of fire. The inconvenience is extreme and the risks are great, while the amount of good a woman can do under such conditions is much curtailed if not altogether abolished. No doubt in many instances the Boers brought their women with them into the fighting line, but in this, as also in a good many other matters, their example is not one to imitate.

I think it should be an established rule that Governments should send to the seat of war properly accredited military medical officers as military medical attachés to observe the medical service and organisation in the field and to benefit by the experience which they would thus gain to the great advantage of their respective countries. This has already been done to some extent, but rather, I fear, in a half-hearted manner. If foreign medical officers, for instance, had had the opportunity of closely watching the working of our medical service during the war it could not fail to be of valuable assistance to them in perfecting their own medical organisation. There were two German officers at Modder river who were surprised and delighted with what they saw there and, moreover, they took off their coats and helped manfully. The military attaché accompanying the headquarter staff may know very little of the operations, he may be even viewed with distrust, but a medical attaché would find a welcome from his brother medical men who would have nothing to conceal from him.

The aspiration that war might be made impossible by reason of the frightful wounds which modern weapons would produce and their devastating influence finds no realisation in the results of the present campaign. The dreadful horrors which were predicted have not taken place. The repeating rifle as an arm of precision is better than anything which has preceded it, and experiment seemed to indicate that it possessed most destructive powers. Modern artillery is also considered to have been enormously strengthened and improved, yet its destructive effects compared with rifle fire are limited. Of the whole number of wounded up to the present time 27 per cent. were damaged by shell fire and 73 per cent. by rifle fire. This even is a larger proportion than usual. At Colenso there was a two days' bombardment and five Boers were killed. The German Boer Artillery Commandant Albrecht estimates that for every thousand shells we fired the Boers lost the insignificant number of 12 killed and 40 wounded. At Paardeberg a most terrible and incessant shell fire was continued during 10 days. There were 120 guns hurling tons of metal into the 4000 Boers there, one gun for every 33 Boers. Yet the casualties were insignificant, one calculation putting them at one man for each gun.

I venture to believe that never before has there been a larger proportion of recoveries and return to duty after gunshot wound than during the present campaign. Never before have injuries to what we consider vital structures and organs been recovered from as they have been now. Up to May 12th the total number of wounded officers and men in the campaign has been 10,701. The deaths were 571, or 5·34 per cent., which is, I think, very small. It is noteworthy that the death-rate amongst 748 officers wounded was 2½ per cent. greater than amongst the 9953 men. Their injuries were possibly more severe. Amongst the invalids from South Africa admitted to the Netley and Woolwich hospitals there were 92 cases of knee-joint injury (28 of these were discharged as fit for duty), 154 cases of chest-wound (73 discharged fit for duty), and 56 cases of abdominal wound (26 discharged fit for duty). Three knee cases, five chest cases, and three abdominal cases have been invalided out of the service. The final results in the remainder are as yet undetermined, but many of them are on sick furlough and will presumably be eventually sent back to duty. I do not know what it may have been in the old days of Crecy and Agincourt for instance, but we know the death and destruction wrought in the wars of Napoleon. We know, too, the frightful losses in the Crimean war. I have seen the terrible injuries, followed by an extravagant death-rate, caused by the heavy leaden bullets of the Chassepot and the needle-gun, and of their destructive effects there are several examples on the table. A fatal consequence was the general and accepted result of almost every important injury. The primary damage and the after suffering now incurred appear as nothing in comparison to what these formerly were, and so from this side of the question I fear there is but small hope to expect that wars will cease, even if their cessation, as there is, I consider, much reason to doubt, would prove an unmixed benefit to mankind.

A HUNDRED POUNDER SHELL.[1]

Extract from a letter from Colonel Downing, Commanding Royal Artillery in Ladysmith, to Sir William MacCormac, dated Headquarters Ladysmith, April 24th, 1900, received May 19th, 1900.

A six-inch shell fired from a "Long Tom," commonly called "Bulwana Bill," a Creusot gun used by the Boers to bombard Ladysmith from Imbulwana Mountain. The gun was mounted on a disappearing carriage and was able to hurl this large hundred pounder projectile 10,000 yards, or just six miles English. Umbulwana is about 4000 yards from Ladysmith.

"Bulwana Bill," Colonel Downing writes, "used to fire 20 shells a day into Ladysmith, except on Sundays, and considering the number of shells poured into Ladysmith from all sides our loss was mercifully small. Yet it was a very wearing experience to endure for 120 days, and it is stirring to think how steadfastly our troops stood it. I have seen sentries on two occasions when a shell plumped down within 20 yards of them remain standing at attention without moving a muscle. One was an infantry man on guard over the ordnance stores; the other a gunner over his guns. Shelters were constructed but the men were at first very unwilling to take advantage of them (like a lot of rabbits, as one of the gunners said) until they were forced by their losses and the inability to retaliate. Well," says Colonel Downing, "may we be proud of our British soldier; his patient endurance and steadfast pluck is what it always was, as recorded in past history."

[1] The shell was exhibited to the society.

MIDDLE WARD HOSPITAL, MOTHERWELL.—This is one of the isolation hospitals of the county of Lanark, the population of the Middle Ward being about 142,000. The annual report by Dr. J. J. Buchan, the resident superintendent, shows that there were 114 patients in the hospital at the beginning of 1899, and that during the year there were 849 admitted, making 963 under treatment. Of these, 810 were discharged recovered and 50 died, leaving 103 in hospital on Dec. 31st. The admissions consisted of 235 cases of enteric fever (with 23 deaths), four of continued fever (with one death), 571 of scarlet fever (with 19 deaths), 21 of diphtheria (with five deaths), five of erysipelas (with one death), 12 quarantine cases (with one death), and one case of measles. Typhus fever is not mentioned in the statistical tables, but it appears from the report that five cases of this disease were admitted, of which "four were notified as enteric fever and one as continued fever"; they all recovered. Among the nursing staff there were two cases of enteric fever (with one death) and one case of diphtheria.

A Lecture
ON
THE OPERATIVE TREATMENT OF SIMPLE FRACTURES.

Delivered at Guy's Hospital on May 25th, 1900,

BY W. ARBUTHNOT LANE, M.S. LOND.,
SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN.

GENTLEMEN,—I feel that I owe you an apology for venturing to consider to-day the principles which should guide us in our treatment of fractures, since you have had only recently the advantage of hearing a lecture on the same subject by Mr. Golding-Bird who has brought to bear on it the result of his well-known great dexterity and skill exercised during a long period in the wards of Guy's Hospital. The excuse I would offer is that a consideration of the same subject through the different mental visions of two observers perhaps affords you the advantages which are derived from the observation of an object by the stereoscope and enables you to define its outlines more accurately and to obtain a clearer and more correct image than if you see it from one point of view only. In this way I hope I may help you to acquire a better grasp of the principles on which your treatment of fractures must be based. In any case, any trifling divergence in Mr. Golding-Bird's views and mine will give you food for thought and judgment.

As I have not discussed the subject of fractures with you recently I propose going over the several steps by which I arrived at such opinions as I hold about it. While studying in the dissecting-room the remarkable changes that occur in the human skeleton from the habitual assumption of attitudes of activity in the labourer and of attitudes of rest in the feeble subject, and the consequences of injury generally to bones and joints, my attention was called to the results of fractures which exist, as you know, in a large number of the bodies supplied for dissection. I was very much struck by the inaccuracy of the statements in surgical works as to their relative frequency and by the incorrect explanations given as to their causation. I will illustrate my meaning by a few examples only.

For instance, on examining the several fractures of the hyoid bone and larynx I found that the statements of the text-books as to their relative frequency and fatality were singularly incorrect. The results of these observations are published in the Transactions of the Pathological Society, 1895,[1] and were submitted to a committee who reported on them.

Again, one's common-sense suggested that fracture of the acromion, owing to its very exposed position, would probably be of very common occurrence, yet the statistics of Middlesex Hospital for ten years quoted in the text-books gave ten fractures of the acromion out of a total of 1084 cases. I showed both on the dead body pathologically and experimentally and also in the living that this was not the case and that in certain classes of the community fractures of the acromion largely exceeded in number those of any other bone in the body.[2] This mistake probably arose from the fact that the anatomist had been beforehand with the surgeon and had considered that the condition of the acromial fragment which almost always follows its fracture was a non-union of the epiphysis. With a curious simplicity the surgeon noticed that there was "some as yet unexplained connexion between this condition (of non-union) and the disease called 'chronic rheumatic arthritis of the shoulder-joint,' as they are often found associated."[3] He was unable to grasp the meaning of the necessarily frequent combination of an ununited fracture with what is a "traumatic arthritis" in the joint that is liable to suffer more or less severely from the same injury which produced the fracture. Fracture of the coracoid process, on the other hand, occurred on six occasions out of the collected total. So little was the knowledge of the relationship of the coracoid process to the clavicle known that this injury, though ascribed to direct violence, was illustrated in the same work by cases in which the shoulder-joint was at the time in a position of extreme flexion, showing that the violence must have been indirect in them at least. Fracture of the coracoid process[4] is produced in forcible flexion of the shoulder by bringing about the violent impact of the coracoid process against the under surface of the clavicle. It would seem almost impossible to break the coracoid process alone by direct violence.

As we are considering the shoulder-girdle I would call your attention to the fact that both the frequency and the causation of the fractures about it were due to the want of knowledge of anatomists of the physiology of the part. Fracture of the coracoid process is a case in point. The anatomist and surgeon were so unconscious of the mode in which the weight of the arm is transmitted through the shoulder-girdle, the costal arches, and the sternum to the spinal column that the former did not describe it at all in anatomical works and the latter ascribed the supposed absence of fracture of the first rib "to the fact of its being sheltered by the clavicle." I showed, both in the dead body and in the living, that fracture of the first rib was of comparatively frequent occurrence and explained fully in the paper published in the Guy's Hospital Reports, 1885, the mode in which force applied to the shoulder-girdle produces fracture of the acromion, of the clavicle, of the first, second, and even the third costal arches, and of the sternum, and dislocation of the acromion, of the clavicle, and of the manubrio-gladiolar joint. These I will merely refer to here as the time at my disposal is necessarily limited, otherwise I would remind you of the remarkable changes that occur in these parts in consequence of their being exposed to severe pressure over a long period of time, as in the labourer, when you would see how they supply a simple key to the explanation of the causation of these fractures. The ignorance of the mechanics of the lower extremity was still more unfortunate, since because of it arose the use of the splint with the vertical foot-piece and the principle, or want of principle, involved in its application. This I called attention to and described in a paper read at the meeting of the British Medical Association in 1894.[5] As you are well aware, in the supine resting posture the thigh rotates outwards till controlled by the resistance offered by the ligaments of the hip-joint, when the inner margins of the feet include between them an angle of about 90 degrees (see Fig. 1). The size of this angle varies with the age and occupation of the individual. This outward rotation occurs of necessity because the immense proportion of the weight of the thigh lies outside the axis around which the limb rotates at the hip-joint. If, therefore, there be solution of continuity of the femur or of the tibia and the fibula and the fragments be displaced off one another, when the surgeon forces the lower segment into such a position that the foot fits the vertical foot-piece, he of necessity rotates the lower portion of the limb on the upper through an angle varying from about 45 degrees, and since the ties in the length of the limb are inextensile he increases the overlapping of the fragments to a corresponding extent. This can be demonstrated most completely in the dead body—in which the length of the ties is unaffected by hæmorrhage and inflammation—as well as in the living. You are all familiar with the practice that has been adopted for very many years in the treatment of fractures of the leg—namely, of attempting to bring the anterior superior spine, the middle of the patella, and the ball of the great toe into a straight line. That in the normal leg these points occupy roughly the same line is perfectly true, but that they can be made to occupy this line in fracture of the tibia and the fibula is no proof of accurate apposition of fragments, for the reason that the position of the great toe can be so readily altered by even slight adduction of the foot and because of the free mobility of the overlapping broken ends on one another. The best evidence which I can offer of its uselessness is that it has been constantly applied in practice for a very long time and yet the results obtained have been unsatisfactory in the extreme (see Fig. 2). I mentioned earlier that neither the anatomist nor the surgeon had to my knowledge ever considered the mechanics of the shoulder-girdle. Let us look at

[1] On Fractures of the Hyoid Bone and Larynx, p. 82.
[2] Some Points in the Physiology and Pathology of the Changes Produced by Pressure in the Bony Skeleton of the Trunk and Shoulder Girdle, Guy's Hospital Reports, 1886.
[3] Holmes's System of Surgery, vol. i., p. 953.
[4] Mode of Fixation of the Scapula suggested by the Movements of that Bone in Extreme Flexion of the Shoulder-joint; its Bearing upon Fracture of the Coracoid Process, Brit. Med. Jour., May 19th, 1888.
[5] Fallacy of the Vertical Foot-piece.

the hip-joint. You will find it stated in your anatomical text-books that "flexion of the hip-joint is arrested by the soft parts of the thigh and abdomen being brought into contact."[6] Now, gentlemen, this is a most important statement and its effect is far reaching. Is there a shadow of truth in it? I am afraid there is not. If you fix the pelvis by extending one hip-joint you will find that the normal limit of flexion in the other is about 90 degrees in the adult and that this varies with the age and habits of the individual. If you examine the joint as to the mechanism by means of which flexion is controlled you will see that it is by the impact of the margin of the acetabulum upon the neck of the femur. If you study the movements of flexion combined with those of adduction and abduction you will find that the degree of possible flexion varies inversely with that of adduction and directly with that of abduction, and that in extreme adduction the degree of possible flexion is very small indeed. In all these positions movement is controlled by the impact of these bones on one another and such control is of the greatest importance. I have described in previous papers the advantage which it affords to the labourer in the direct transmission of weight during locomotion and Figs. 3 and 4 illustrate the changes in the bone that result from this constant transmission. Surgically the importance of the knowledge of this mechanism is very great, since when the joint is fixed in a position of flexion varying between the very small possible angle in extreme adduction to that exceeding a right angle in extreme abduction the point of impact of the neck of the femur on the acetabular margin becomes the fulcrum of a lever of the first order, the short arm corresponding only to the very little interval between this and the upper limit of the head, while the long arm is formed by the whole shaft of the femur or the entire leg if the knee is extended. It is by means of this

FIG. 1.

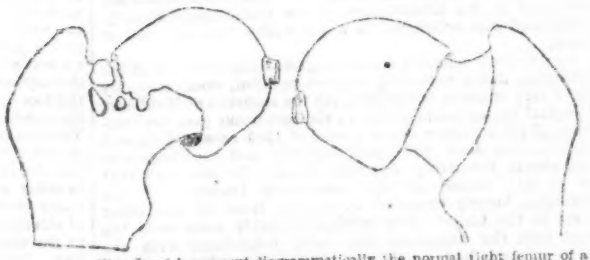
Fig. 1 represents the alteration in the axes of the fragments of the femur which results from the rotation of the lower one upon the upper in the manner described. It also shows very well the conditions I call mechanical or traumatic arthritis which have developed in the extremities of the bone in consequence of the variation from the normal in the manner in which pressure is transmitted through them subsequently to the fracture.

[6] Gray's Anatomy.

FIG. 2.

Fig. 2 shows the same alteration in the axes of the fragments consequent on the inward rotation of the lower fragments and the usual form of displacement.

FIG. 3. FIG. 4.



Figs. 3 and 4 represent diagrammatically the normal right femur of a coal-trimmer. They show the remarkable alteration in the form of the head, whose area is considerably increased by bone formation, articular cartilage being freely formed upon its surface, producing a mushroom-like appearance on its posterior surface. (See Fig. 4.) What it is particularly wished to call attention to is the development of a prominent ridge of bone and groove at the point of habitual impact of the neck of the femur against the acetabular margin. This can be seen in many varieties of labourers.

arrangement that intracapsular fracture of the neck of the femur, separation of the epiphysis of the head, acquired dislocation, and possibly also the congenital variety, and dislocation from disease are produced.

I noticed that in proportion as the lines of force through a joint are altered by a fracture of a long bone, so there are developed in it these changes which I have called "mechanical or traumatic arthritis," and which are popularly regarded as evidence of a disease called sometimes "osteo-arthritis" and at other times "rheumatoid arthritis."

The extent and character of these changes vary within wide limits with the age of the individual. I found that

in the young subject a considerable alteration in the mechanics of a joint can be met after a time by the consequent variations in the growth of the several portions of the epiphysal line in obedience to the law which I formulated—namely, "that the rate of bone formation in the several parts of a growing line vary inversely as the pressure transmitted," and by changes in the form of the articular surface, new bone and articular cartilage being laid down with remarkable freedom. To the modifications in the normal anatomy where no destruction took place I applied the term "adaptive" for convenience and to save repetition. On the other hand, in the adult after a certain age, which varies largely with the circumstances of the individual and which is arrived at much earlier in life in those who pursue a laborious existence than in the leisured classes, changes of quite a different nature result and in accordance with the most definite laws. These changes again for the sake of brevity I called "passive." They consist in the removal of articular cartilage at points of excessive pressure, induration, and frictional changes in the exposed bony surfaces, the deposit of bone on their margins, a diminished security of the joint, and all those changes which constitute one of the varieties of mechanical or traumatic arthritis. They vary in extent directly with the age of the patient at the time the injury is sustained and with the amount of alteration in the mechanics of the joint consequent on the alteration in the form of the bone produced by its fracture. They are naturally much more marked in the lower than in the upper extremity in consequence of the superjacent weight of the body and any added load being transmitted through the joints of the leg. Still, they occur to a marked extent in the arm and especially in those leading a laborious life or depending on their manual dexterity for their livelihood. Putting it in other words, definite evidence of mechanical or traumatic arthritis follows of necessity in the adult on every fracture in which the displacement of the fragments is such as to alter the lines of force transmission through dependent joints from the normal to a degree varying directly with such alteration, with the age of the patient, and with the amount of force transmitted habitually through the joint.

I then determined to find out the clinical manifestations of these changes and for this purpose made extensive inquiries among labourers, employers of labour, Poor-law officials, medical men whose practice was chiefly among the working classes, and instrument makers, and examined a large number of cases which had been treated in various institutions. Feeling that I was likely to be biased I asked Mr. F. J. Steward (who was then house surgeon and who is now on the surgical staff of the hospital), Mr. D. M. Beddoe (also a house surgeon), and others to make independent inquiries among the patients who had been treated at Guy's Hospital during a considerable period of time. The result of my observations was that I found that the mechanical depreciation following a fracture of the lower extremity is often very great indeed, and that when the individual is dependent on the complete security of his movements during locomotion the injury deprives him of his capacity to follow that employment any longer. Such people are firemen, scaffolders, steeplejacks, sailors, soldiers, painters, &c.; of course, in tailors, shoemakers, &c., the injury affects them but little financially. I was amazed at the unsatisfactory nature of the results which were obtained in our hospitals and elsewhere and at the loss to the value of the man as a money-making machine not only during a convalescence often very prolonged but also permanently. In many the traumatic arthritic changes did not arrive at a stage of development to produce symptoms till some time had elapsed since the receipt of the injury.

I was unable to discover that the result obtained bore any relation to the skill or experience of those under whose care the patient had been after the fracture but that it depended entirely on the character of the fracture. I do not mean that the patient escaped harm at the hands of the surgeon, for most of them showed the inward rotation of the lower segment already referred to in a very marked manner with the inconvenience which it produced. My experience was confirmed in every particular by Mr. Steward, Mr. Beddoe, and others who had kindly helped me in the matter.

I had by this time come to the conclusion that the supposition that the surgeon is able to "set" fractures satisfactorily and to restore to their original forms broken bones when their ends had been driven apart by force from one another by manipulation and splints is in the lower extremity purely mythical; also that the idea that spasmodic muscular contraction is the factor that opposes the accurate replacement of the fragments in apposition is equally fallacious and imaginary. It seemed clear to me that in a part like the leg, where the long bones are surrounded by a lot of muscles, &c., these tissues form inextensile ties in the length of the bone or bones. When these are broken and their ends forced apart by injury a variable amount of hæmorrhage takes place into the soft parts about the fracture, and this is followed very rapidly by a corresponding inflammatory process which with the hæmorrhage increases the bulk of the ties in the length, shortening them up and opposing their elongation to their original length, and when at all marked renders it impossible by any force which can be exerted on the limb by traction to replace the broken fragments in apposition.

The difficulty of replacement varies directly with the amount of hæmorrhage and with the degree of the subsequent inflammatory processes. These suppositions are entirely verified by operative procedures which I have undertaken freely since 1893 in these cases of simple fracture. Under the deepest anæsthesia, when all muscular spasm was in abeyance, we found it necessary to exert often a very large amount of force by means of lion forceps, strong elevators, &c., to lever the fragments which had been freely exposed into apposition and in many cases to retain them there. These operations demonstrated the incorrectness of the statements of surgeons to the effect that they were able by manipulation and splinting to restore the long bones as those of the leg to their original form in simple fractures, and they also showed in an indisputable manner that muscular spasm was not the agent that opposed such restoration. They taught me more clearly two things which my acquaintance with the specimens in the dissecting-room and my experiments on the dead body had previously suggested. One was that fractures—say, of the tibia and fibula—produced by indirect violence were practically almost always spiral in character and were due to torsion of these bone

FIG. 5.

A spiral fracture of the tibia.

usually around their long axis in the direction of abduction of the foot, and in these the fracture of the fibula was higher than that of the tibia. The character of this fracture is well illustrated in Fig. 5, in which both fragments are fortunately intact. You will notice that this is not an oblique fracture at all, but that each fragment terminates in a sharp V-shaped end which fits accurately by vertically cut and not sloping edges of compact tissue into a similarly shaped

interval in the lower fragment. There is occasionally comminution. The character of the fracture of the fibula differs somewhat because of the smaller calibre of the bone and its different shape and structure, but is on the whole similar to that in the tibia.

The fracture of the tibia produced by direct violence varies altogether in character from that just described. It may be transverse or oblique, and is perhaps more frequently comminuted; the fracture of the fibula resembles it and takes place at about the same level as that of the tibia. In the fracture produced by indirect violence the lower fragment is almost always displaced upwards, backwards, and outwards behind the upper and this is also very often the case when the violence is direct. Apart from comminution the difficulty of bringing the fragments of the tibia into accurate apposition is much greater in the indirect than in the direct form of fracture, partly on account of the greater overlapping of fragments resulting from the injury, partly from the difficulty of getting the sharp pointed extremities of the fragments into their corresponding recesses which occupy very different planes, and partly because the fibular fracture is placed at a higher level and is also difficult to restore for the same reason. I have frequently found these operations very long, making a considerable demand upon one's ingenuity and requiring much skilled assistance. If great opposition to the replacement of fragments was experienced I exposed the fibular fragments also.

In direct fractures it was generally much easier to bring the fragments into accurate apposition, though in the vast majority of them the physical conditions were such that this could not have been effected without operative interference. Whether screws or wire or both were used depended entirely on the tendency to separation of the fragments and where any comminution existed the bits were perforated and fitted accurately in position with silver wire.

These considerations of the treatment of simple fracture by operation were first published by me in a paper in the Transactions of the Clinical Society for 1894, entitled "The Method of Treating Simple Oblique Fractures of the Tibia and Fibula more Efficiently than those in Common Use." In that paper I enunciated clearly the principles to which I have just called your attention. These views aroused

FIG. 6.

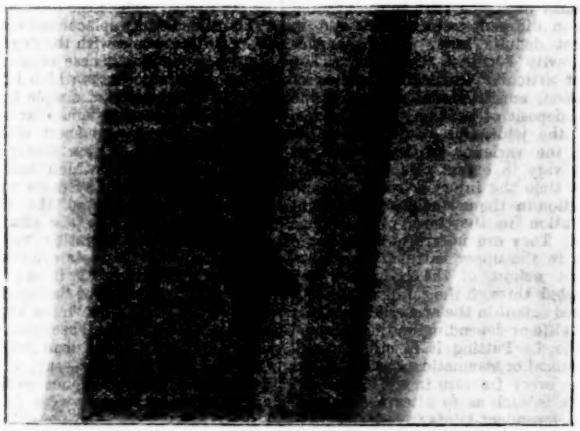


Fig. 6 represents such a fracture as is shown in Fig. 5, the radiograph having been taken after convalescence. A single screw was sufficient to retain the fragments in accurate apposition, and the mechanics of the patient were as perfect as they were before he sustained the injury.

FIG. 7.

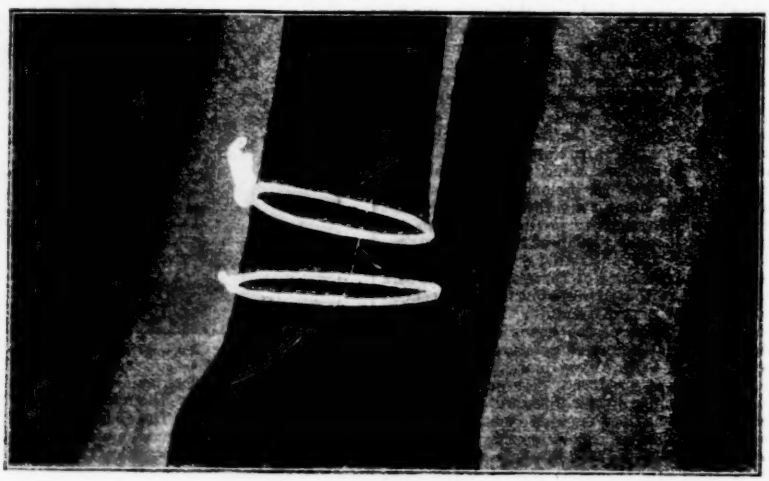


Fig. 7 represents a fracture of the tibia produced by direct violence. The fracture of the fibula is at a slightly higher level and is not shown in the diagram. The direction of the fracture is oblique and there was much fissuring of the fragments. The result of the operation was to restore the mechanics of the part to their original condition.

much criticism and received support from very few. Indeed, my only supporter in the medical press was Mr. Alfred Parkin of Hull, formerly surgical registrar at Guy's Hospital, who wrote on the subject in THE LANCET in 1894.[7] As an example of the attitude that was assumed by my critics and also as showing the generally accepted teaching of the time I will refer briefly to two or three writers. The following is abstracted from a clinical lecture by Mr. Christopher Heath on "Fractures of the Lower Limb," published in THE LANCET in 1896[8]: "I would remind you how important it is, in fracture of the leg particularly, that the fracture should be set thoroughly and accurately. Of course I know well that there are many difficulties. Immediately after the accident all the muscles of the limb are more or less in a state of spasm, and tend, therefore, to pull the bones into abnormal positions, but that state of spasm passes off in the course of a few hours and you can generally manage with care and patience to put the limb into a proper position, and unless that is done, and done accurately, the surgeon has not treated the case properly." "In cases of compound fracture, where you find, the moment after you have set the limb, that the bones become displaced again, it would be quite within the bounds of good surgery to divide the tendo Achillis subcutaneously, or to drill the two fragments and put in pegs or screws to hold the bones together; and I may say that this method of pegging or screwing has been recommended by an enterprising surgeon not only for compound but also for simple fractures. But I cannot conceive how anyone can believe that it is justifiable to convert a simple into a compound fracture, and of this I am quite certain: that the majority of surgeons for the present will remain content with the usual methods of treatment." A further instance is to be found in a lecture by Mr. Marmaduke Sheild, published in the *Clinical Journal* of May 15th, 1895, in which he took as the text of his paper the final remark with which I concluded a lecture on Fractures which was published in the *Clinical Journal* of April 17th, 1895, entitled "Some Clinical Observations on the Principles involved in the Surgery of Fractures." The following is the sentence in question: "The treatment of fractures as it exists at present is a disgrace to surgical practice." I must refer you to his paper for full details, but putting its purport briefly it was to the effect that if infinite pains were taken in the vast majority of cases "excellent results could be obtained without any operative interference." He insisted on the setting being postponed until the inflammatory effusion had to some extent subsided and the blood had begun to be absorbed. He believed that spasmodic muscular contraction afforded the obstacle to the accurate replacement of fragments and that it subsided in a week or ten days when he attempted to get the fracture into good position. He did not consider that the effusion and inflammation were a bar to the accurate replacement. Mr. Christopher Heath's opinion is that "the spasmodic muscular contraction passes off in a few hours" when, as he supposes, he restores the bone to its original form effectually and at once.

In order to accentuate still further the remarkable divergence of opinion that exists among surgeons as to the period and manner in which the unfortunately misleading process called "setting" should be effected and the obstacles opposing this I have extracted the following from an address on the Treatment of Fractures, by Mr. Pearce Gould, published in THE LANCET in 1897[9]: "Having arrived at a full and correct diagnosis the next point to attend to is to reduce the fragments at once, at the earliest possible moment, remembering that lapse of time always increases the difficulties in doing this, never lessens them, and soon makes them insuperable. This reduction of the fragments must be complete or perfect at once; we must not rest in any halfway house, content with improvement to-day in the hope of still further correction to-morrow." "The causes of the displacement [of the fragments] are either the fracturing force, the action of gravity, or the pull of muscles." These three factors would appear to constitute the "difficulties" previously referred to, but how they are exaggerated by delay is not very clearly stated. It is difficult to understand, if this is the case, why accurate apposition should not be effected since "the fracturing force" is no longer in evidence, while under an anæsthetic the "pull of muscles" would not exist. The "action of gravity" could not afford a very efficient bar to reduction of the displacement. In reference to the period of setting, contrast this, for instance, with Mr. Marmaduke Sheild's very positive statement as to "the folly of attempting at once to fix a bad fracture in accurate position." These diametrically antagonistic views make one long for definite arguments and scientific facts in support of them which can be met in a logical manner. I have merely called your attention to these statements to show that while surgeons hold very similar views—and, I believe, perfectly incorrect ones—as to the mechanical factors that oppose the reduction and retention of the fragments of a broken bone in accurate apposition, yet they would appear to obtain equally good—in fact, if one can interpret their language according to its usually accepted signification, perfect—results by methods which to the ordinary mind are mechanically absolutely antagonistic both in practice and in principle. A very few years elapsed after the publication of the paper in the Transactions of the Clinical Society before the process of radiography was applied when the truth of the statements I had made was substantiated in a manner which admitted of no doubt, and at the present time some of the best surgeons in the world operate extensively upon such cases of simple fracture that they think require it.

Time will not allow me to deal separately with fractures of the several bones, but generally I would insist that in every simple fracture in which it is important to the individual that the original form of his skeleton shall be retained and his mechanics suffer no alteration, the surgeon should, *failing to obtain accurate apposition as determined by the radiograph*, cut down on the seat of fracture and restore the bone or bones to their original form. He must not be satisfied with what is clinically called "good position" when by operation he can obtain a perfect result, and in the case of the leg this is particularly important.

We must remember that the public imagine when we go through the ceremony of "setting" a fracture that we mend their bones as skilfully and accurately as the carpenter mends the broken leg of a chair or table, and that is or was the teaching of very many surgeons. Those who continue to assert that they are able to restore broken bones to their original form can readily substantiate the truth of their statements now by means of the radiograph, and if they have any confidence in them will doubtless do so. Up to the present, however, I have seen no evidence of this kind brought forward but merely vague statements that could not be met. Again, some few surgeons would appear to think that overlapping of fragments only produces a corresponding amount of shortening which they say is a matter of no practical importance to the patient. I wonder what attitude a judge and jury, faced with the radiographs, would take up in a compensation case if such a position was advanced by the surgical expert. In any case the patient should have the facts, including the radiographs of the fracture in the best possible position, laid clearly before him and he should be allowed to choose which form of treatment he prefers. I cannot help feeling that a clearer perception of the mechanical conditions which are present in fractures will influence surgeons very materially in favour of operative measures and that the treatment of fractures will be based on scientific principles and will soon cease to be a disgrace to surgery.

[7] The Treatment of Oblique Fractures of Tibia and Fibula, THE LANCET, April 21st, 1894, p. 1035.
[8] THE LANCET, Jan. 4th, 1896, p. 1.
[9] An Address on the Progress of Surgery and the Treatment of Simple Fractures, THE LANCET, June 12th, 1897, p. 1599.

GLASGOW SAMARITAN HOSPITAL FOR WOMEN.—The annual meeting of the supporters of the Glasgow Samaritan Hospital for Women was held on March 27th, the Lord Provost (Mr. Chisholm) presiding. The directors' report showed that the total number of patients treated during 1899 was 1224, of whom 325 were indoor patients received into the hospital wards and 899 were outdoor patients treated at the "Agnes Barr" Dispensary, where they made 4063 attendances. All the cases treated in the hospital were of a serious nature involving a protracted occupation of all the available beds. Several patients were upwards of three months in the house while the average length of residence of the other patients was one month. 12 patients died in the hospital during the year; if three who were admitted in a dying condition be deducted the death-rate was under 3 per cent. 55 abdominal sections were performed. The need of additional indoor accommodation was extremely urgent and the directors made an earnest appeal for funds.

The Milroy Lectures

ON

SUMMER DIARRHŒA,

WITH SPECIAL RELATION TO CAUSATION AND PREVENTION.

Delivered before the Royal College of Physicians of London on March 8th, 13th, and 15th, 1900,

BY F. J. WALDO, M.A., M.D. CANTAB., D.P.H.,

BARRISTER-AT-LAW, MEDICAL OFFICER OF HEALTH TO THE INNER AND MIDDLE TEMPLES AND TO THE PARISH OF ST. GEORGE-THE-MARTYR, SOUTHWARK, ETC.

LECTURE III.[1]

Delivered on March 15th, 1900.

MR. PRESIDENT AND GENTLEMEN,—A bacteriological investigation might be made of the fæces of the cow as well as of the horse, inasmuch as the milk of the former is constantly exposed to fæcal contamination during collection and storage. In this connexion we may also recall the fact that certain bovine diseases, such as tuberculosis, anthrax, and vaccinia, are common amongst mankind. So, too, with the horse, which suffers from glanders, tubercle, and other maladies that infect the human species. If the fæces of the horse contain micro-organisms pathogenic to man there could hardly be any more certain means devised of wide distribution of the specific germs than by our present system of horse traffic. Possibly the mysterious distribution of influenza may be not remotely connected with some such origin.

IS DIARRHŒA PREVALENT IN MEWS?

Supposing horse-dung to be answerable to any extent in the causation of summer diarrhœa the question naturally arises whether the disease is prevalent amongst the families of stablemen who live in mews. So far as can be ascertained there is no such excessive incidence upon that particular class. It must be borne in mind in dealing with this point that cleanliness is the rule in stables and stable-yards and that the dung is stored in heaps and pits which are cleared at short intervals before the material has had any chance of becoming dry and powdery. In mews, therefore, the conditions are not favourable to the aerial distribution of horse-dung in the form of dust, which is the assumed antecedent if we recognise horse-dung as the chief etiological factor. This view of the subject is borne out by the experience of Dr. Orme Dadfield, medical officer of health of Kensington, who informed me that he has not observed any special incidence of fatal diarrhœa in 180 mews situated in his district.

THE GENERAL CAUSATION OF SUMMER DIARRHŒA; CONCLUSIONS.

In 1880 Dr. G. B. Longstaff advanced the conclusion that "summer diarrhœa[2] is caused by the pollution of air, water, and food by the decomposition of organic matter during very hot weather." Much the same view was taken by Dr. E. Ballard in 1897, when he advanced as a provisional hypothesis[3] "that the essential cause of diarrhœa resides ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organisms not yet detected, captured, or isolated; that the vital manifestations of such organisms are dependent, amongst other things, perhaps principally, upon conditions of season and of the presence of dead organic matter, which is its pabulum; that on occasion such micro-organism is capable of getting abroad from its primary habitat, the earth, and having become air-borne obtains opportunity for fastening on non-living material and of using such organic material both as nidus and as pabulum in undergoing various phases of its life-history." These two opinions practically agree and are supported in 1899 by Dr. A. Newsholme, who says that "it is a mere commonplace to state that diarrhœa is chiefly caused by organic dust"; and again,[4] "the fundamental condition favouring epidemic diarrhœa is an unclean soil, the particulate poison from which affects the air, and is swallowed most commonly with food, especially milk." Some time after these conclusions as to the part played by horse-dung in the causation of diarrhœa were arrived at in my own mind Dr. Louis Parkes published in one of the medical journals a letter which clearly showed that his line of reasoning was traversing much the same ground. Speaking of the offensive condition of the main London streets he wrote:[5] "The nuisance from this condition of the streets is obvious and unmistakeable. The question of injury to health is not so easy to answer. The dust from horse droppings is enormously rich in the organisms known as bacillus coli communis and bacillus enteritidis sporogenes, but although both these organisms are undoubtedly pathogenic to some animals their effect upon man when inspired into the mouth, throat, and lungs or swallowed with the saliva has not yet been determined. On general grounds, however, we are entitled to say that all offensive organic effluvia are prejudicial to health. There can be no ozone in the air where such emanations exist; the air has lost its vitalising principle, and there is a possible danger in the inhalation of dust containing bacilli whose normal habitat is the bowel of animals."

The common ground taken by these observers extends over 20 years. It agrees with my own conclusion except that I would go farther in framing a working hypothesis, and suggest that both the organic material and the offending micro-organisms that act as the *causa causans* of summer diarrhœa are to be found in the horse-dung that is daily deposited in vast quantities upon our highways. That the theory falls short of absolute proof may be freely admitted; at the same time I venture to say that so far as my applications go it appears to explain more or less satisfactorily the known facts of the distribution and history of this important disease. This matter will be discussed later, but meanwhile it may be pointed out that the theory of an origin in horse-dung differs from the views of the above quoted authorities only in the view that the habitat of the pathogenic organisms is on the surface of the soil and not in the soil itself. In mentioning horse-dung as the specific polluting material I have gone a step further by narrowing down the general term "organic matters" to the more definite position of a particulate material rich in micro-organisms, some of which, at least, are pathogenic to man.

TREATMENT.

The curative treatment of summer diarrhœa leaves much to be desired. At the same time, however, it may be broadly stated that hardly any disease has reaped more benefit from the advances of modern therapeutics. The use of opiates has greatly lessened. Alcohol is the best stimulant, and astringents are at times useful, especially in the forms of the subgallate of bismuth and the newer combinations of tannic acid, such as tannigen, especially in the later stages. Intestinal antiseptics have proved on the whole somewhat disappointing, while of purgatives castor-oil and calomel are the best. An excellent plan is to keep the child for 12 hours or more upon plain sterile water. Predigested milk is of service as is the use of pepsin and pancreatin. Intestinal irrigation is most valuable, especially in cases of colitis or of entero-colitis. Sterilised water or normal saline solution are the best for injection and may be given cold to reduce fever or hot to remedy prostration or collapse. In chronic conditions various medicaments may be added. Lastly, there appears to be some possibility of future help from serum treatment.

PREVENTION.

What have we to prevent? The answer to this question is wrapped up in a number of problems which are more or less imperfectly understood. It may be said, however, that in summer diarrhœa we have to deal with a malady that is symptomatic of a bacterial infection, almost certainly of multiple origin, probably of aerial distribution, and contracted often through the agency of food. Diarrhœa is a disease of all ages, but the brunt of its mortality falls on young children between the third and twelfth months. Dr. Ballard investigated the records of diarrhœa sickness in various Poor-law and private practices. He concluded that the actual incidence upon age—using that term in relation

[1] Lectures I. and II. were published in THE LANCET of May 12th and 19th, 1900, respectively.

[2] Association of Medical Officers of Health, February, 1880.

[3] Report Cit., Ballard, p. 7, "The Causation of Summer Diarrhœa."

[4] Op. cit. supra.

[5] Brit. Med. Jour., Dec. 9th, 1899, p. 1648.

to the population living at any particular age—is chiefly upon children under five years of age and of that class most upon those under two years of age. After the fifth year the actual incidence lessens remarkably and is least between five and 25 years, after which it gradually increases. Among children under five years of age the incidence is comparatively small upon those under three months, when it increases and begins to lessen between the ages of one and two years. The fact that it is commoner among hand-fed than suckled infants points to some special condition, which may not unreasonably be attributed to cow's milk, the article of diet extensively used in the artificial rearing of infants. At the same time there is evidence to show that the infection may now and then be conveyed by the influence of the stools, while the indirect concern of the bowel discharges in the spread of the malady can hardly be doubted. Indeed, in these respects diarrhœa is strictly comparable with enteric fever. At the same time, from the facts of the case it is clear that the consumption of milk does not play the chief part in adult diarrhœa. Many grown up persons take milk only with tea and coffee, under conditions which are not favourable to the survival of bacteria. At least we are led to that conclusion if we argue from the analogous case of enteric fever which was shown by Dr. D. S. Davies in the recent outbreak at Clifton in several instances not to have been conveyed by contaminated milk when taken in tea. So far as adults are concerned, then, we are compelled to turn to agencies other than milk. A little reflection shows that the milk simply conveys the infection and that it is stored in houses under conditions that apply to other articles of food. The question of the domestic storage of food therefore demands careful attention in regard to the incidence of summer diarrhœa on all ages. As a branch of this subject, and especially as bearing upon the incidence on children, the conditions of milk storage require investigation. Further, as milk is a medium specially open to contamination by micro-organisms and is collected and transmitted under peculiar conditions its safeguarding at every point from the udder of the cow to the mouth of the consumer will enter largely into the question of prevention. The disinfection of the specific bowel discharges of patients and the notification of the diseases are also important points. The predisposing causes such as improper feeding and diet will have to be considered in relation to prevention. It will also be necessary to note the better knowledge of healthy living, overcrowding, poverty, and the proper cleansing and scavenging of all street and other ground surfaces.

PREDISPOSING CAUSES, THEIR PREVENTION.

The influence of artificial feeding of infants as a predisposing factor in diarrhœa is undoubtedly great. At the same time it is a point a little difficult to prove by exact figures. Dr. E. W. Hope's observation, already alluded to, "that infants fed solely from the breast are remarkably exempt from fatal diarrhœa, even among the low class Irish," is significant. Artificial feeding may act in two ways, by introducing into the diet (1) cow's milk with all its possibilities of bacterial contamination; and (2) farinaceous and other indigestible foods whereby the intestines are irritated and more liable to septic influences. Prevention of the first of these dangers may be obtained by safeguarding the milk-supply at every point from source to consumption, a point that will be entered into fully in dealing with exciting causes. The improper feeding of infants, on the other hand, is almost entirely dependent on the ignorance of mothers and nurses. This evil can be met only by the general spread of information amongst those concerned, and it is to the medical profession and to the efforts of enlightened local authorities that we must mainly look for progress in this particular. It is a hopeful fact that many sanitary authorities distribute leaflets giving concise directions as to the proper feeding of infants, following in this step the practice that has for many years been adopted at most hospitals for children.

GENERAL PREVENTION.

There is no need to insist upon the necessity of conditions of wholesome environment, such as ventilation, light, drainage, water-supply, cubic space, and cleanliness. Defects in all or any of these conditions are no doubt concerned in the fostering and retention of the diarrhœa poison, just as they are in regard to zymotic diseases generally. Some of them closely affect causation both in the matter of house- and room-infection and in the contamination of food supplies, and these will be more closely examined.

There is one point of external environment that at the risk of some repetition may be again specially mentioned. In the streets of towns there is always a large amount of horse-dung. Even where the roadways are carefully swept a certain amount of this material collects in crevices and corners, whence, under favourable atmospheric conditions, it is widely distributed in the form of dust and may infect human beings either directly through the respiratory tract or indirectly through the contamination of food. Contamination with horse-dung, moreover, would charge the road-dust with organic matter that under suitable conditions of warmth and moisture would be favourable to the growth of extraneous bacterial life. Even if healthy horse-dung were shown to be free from bacteria pathogenic to man we have still to learn that the same non-pathogenicity applies to the excrement of horses suffering from diarrhœa before we exclude the possibility of infection from horses. A large proportion of the articles of food, such as plums and watercress, exposed for sale in the streets must be infected by road-dust. It is a fact that plums can often be consumed in large quantities by children in the country without ill-effects, but no prudent person would allow a child to eat many plums in town. May it be that the specific infectiveness of these plums exposed in the markets, shops, or stalls is due to dust contamination by horse-dung? It must also be borne in mind that this same dust is blown into larders and houses. The power of peretration by dust is considerable, a fact familiar to all town-dwellers who find that a dust-proof drawer can exist only under conditions of most special construction. In the course of time, as everyone knows, dust can penetrate into the interior of most watches, thereby affording a striking proof of its ubiquity. It may confidently be assumed that where dust enters germs may also go.

While horse-dung is the most universally distributed fæcal element of town dust it should be remembered that there is a large aggregate amount of fæcal matter from other sources. The number of dogs and cats kept as domestic pets is in the aggregate enormous and their fæces are usually deposited in streets or back gardens. Then there are birds of many kinds and rats and mice which add more or less to the fæcal surface contamination. Lastly, there is always a certain amount of such pollution from human sources, especially in the poorer districts where there are many children. In this way the dust of towns is charged with the bowel bacteria of many higher and lower animals and birds. So far as the country is concerned the relative contamination of road-dust is immeasurably less, and the deposited fæcal contamination is freely exposed to the influences of sun, air, soil, and of other natural agencies. Cow-dung, both moist and dry, may obviously play an important part in the bacterial contamination of milk. This risk will, of course, exist mainly in the country, but is also present in town byres.

If we assume this difference between the organic pollution of road-dust in town and country it might to some extent explain the comparative immunity of country populations from diarrhœa. Not only is country dust freer from organic impurity but it has not the same general access to the house storage of food possessed by town dust. As already mentioned, road dust in towns has been shown repeatedly to contain the bacillus enteritidis sporogenes, while horse-dung contains various micro-organisms found in the intestines of man. In this connexion the use of sea-water, which has a distinct inhibitive action upon the growth of germs, is worthy of careful consideration. Similar observations apply to the watering of roads in dry weather, and doubly so before the sweeping of roadways. It is likely that the addition of some antiseptic, such as chlorine, or preferably permanganate of potash, to the water in the water-carts might be of value. The main difficulty in applying disinfectants to roadways is the great bulk and the cost of the disinfecting material that would have to be used. Then, again, it is a familiar observation that rain diminishes diarrhœa, a fact which may be due to the washing of dust out of the air and from exposed surfaces, as well as by collecting and retaining dust on moist and muddy surfaces. In these ways bacterial distribution, and possibly bacterial growth, would probably be much more influenced than by the reduced earth temperature to which the inhibition of diarrhœa by heavy rain is usually ascribed. The water-flushing of streets and alleys would clearly act in a manner analogous to a shower of rain so far as paving surfaces were concerned, and to a minor extent would purify the air by providing a moist surface to which dust would adhere. The

constant and systematical scavenging of streets is another important point.

As regards paving surfaces there is no need to point out that an impermeable paving, as asphalte or cement, can be thoroughly cleansed. The macadam road is more productive of dust and cannot be water-flushed, so that it is less scientifically desirable. The ordinary block wood paving cannot be so readily cleansed as the impermeable roadway, and when worn it is liable to harbour organic material in its interstices. Whatever the nature of the roadway in busy towns during dry weather the constant passage of vehicles and pedestrians together with currents of air must keep up a mass of floating dust. The drier the summer—that is to say, the hotter—the greater is the volume of the floating cloud and the wider is its ultimate distribution likely to be. Hence the pedestrian in our towns is obliged day after day to pass through and to breathe clouds of invisible dust charged with organic particles. In many cases he consumes more of this dust upon fruit bought in the streets or from shops opening on the streets. He takes meals in restaurants exposed to the dust. Then when he returns home he takes food that has been kept in larders to which dust has access. Apart from diarrhœa it seems not unlikely that chronic inflammatory states of the mucous membrane may be caused in town dwellers by the constant inhalation of irritant dust. Diarrhœa and coryza appear to be unknown to the relatively bacteria- and dust-free regions of the frigid zone. It seems not improbable that one of the chief benefits of a visit to the seaside or country is the change to a comparatively dust-free air. Dr. Hope of Liverpool, who has been several times quoted in the course of these lectures, has made some pertinent observations upon the relation between street cleanliness and health. His argument is based upon the cleansing power of rain and is worthy of careful extension by comparing the diarrhœa returns of a large number of districts that are efficiently and inefficiently cleansed. "The connexion between cleanliness and health," says Dr. Hope, "is indicated by the figures which I will quote, showing the association of rainfall with diminished mortality from choleraic diarrhœa during the last 20 years, six of which were average wet summers, with relatively low mortality, and 14 were average dry summers with considerably higher mortality, the extremes being the years 1891 and 1895

Period.	Average annual rainfall June to September.		Annual average of deaths from zymotic diarrhœa during the third quarter of the year.
Six years.	13·8 inches.	Average wet summers.	373
14 years.	10·9 ,,	Average dry summers.	573
Extreme years.			
1891	16·0 ,,	Wet summer.	203
1895	7·7 ,,	Dry summer.	819

"The difference in rainfall in the two years 1891 and 1895 means that upwards of 900,000,000 gallons of water were distributed to the (then) city in the warm season of low mortality, which were absent in the warm season of high mortality. Be it remembered that the manner and time of the rainfall are important."

It seems reasonable then to assume that to systematic street-cleansing we may look hopefully for one potent means for preventing diarrhœa. Another way in which our streets will be rendered purer is by the increase of motor carriages whereby the horse will be displaced. Some zealous advocates of that form of traction even look forward to the time when it will be made illegal to use horses in our crowded centres of population. It is hardly necessary to insist upon the necessity of the daily removal of house refuse and of the careful supervision of ash-bins and other receptacles for rubbish, also of the need of proper house ventilation, sewage, and water-supply. The general relation between diarrhœa and an unwholesome sanitary environment has long been recognised.

SPECIAL PREVENTION.

Under this heading we shall consider mainly the supervision of the milk-supply from its source to its consumption. The subject may be divided into collection of milk, together with its carriage, distribution, storage, and consumption. At each step there are possibilities of bacterial contamination that demand special precautions.

Collection of milk.—This can be considered under, (1) the milker; (2) the cow; (3) the utensils; and (4) the cowshed or byre.

1. *The hands of the milker* may be infected with many micro-organisms, pathogenic or otherwise. They are not unlikely to be so contaminated if he himself be suffering from any specific infectious disorder or if he come from a specifically infected household. The possibility of milk contamination under such circumstances is so obvious that it need not be enlarged upon. It is equally clear that the hands of the milkmen should be carefully cleansed before the milking of each cow. In some cases, as at Hendon, the milker is made to wear white cotton gloves, which are sterilised by steam after each milking. In other places the milking is done by machinery. The milker should wear also a sterilised cotton overall or sterilised apron.

2. *The cow*, which may contaminate the milk locally. The teats may be charged on the surface by contact with dung or dust, which may contain tubercle bacilli, pus organisms from chance wounds, and various pathogenic and non-pathogenic bacteria. Local disease of the udder or the teats may communicate disease to the hands of the milker, as in the famous cow-pox of Jenner. In that case it is easy to imagine the milk could hardly escape contamination. To prevent local infection of this kind it would be necessary to exclude cows with any disease of udder or teats. In all cases cleansing of the teats is required which can be effected by washing with warm water and brushes. General infection from the coat of the cow may to a certain extent be prevented by careful grooming and by keeping the cow scrupulously clean. The milk ducts may be infected by the entrance of bacteria, which may be got rid of by throwing away the milk first drawn. When the cow is affected with bacterial disease there is little doubt that organisms may be excreted with the milk. This seems to be the case with tuberculosis. The obvious preventive is to exclude the milk of all sick or unhealthy cows. The tuberculosis test should be rigidly applied to all cows and the use of infected milk for dairy purposes made penal.

3. *Utensils for collecting and storing milk* should be sterilised. In some places the milk-pail is covered over with a layer of sterilised cotton-wool one or two inches thick. On no account should ordinary surface-well or spring water be used for cleansing vessels. The milk should be at once conveyed to a separate building at least 100 yards away, there to be subjected to a further process of Pasteurisation or sterilisation. The milk is then ready for conveyance to consumer in sterilised bottles or vessels. The milk reception building should be light, airy, with polished impermeable internal surfaces, damp-proof walls, and concrete flooring.

4. *The cowshed or byre.*—The cowshed should be built on sanitary principles much the same as those required for man. Abundant light is necessary and ventilation should be by open or by wired windows and by exits in the roof. Cross ventilation should be insisted upon. The heads of the cows should be at a distance of two or three feet from the wall so as to allow free circulation of air. All fixtures should be of iron or hard wood with smooth surfaces capable of systematic and ready cleaning with soap-and-water and antiseptics. The walls should be as far as possible smooth and in some cases they may be whitewashed. A better surface is that of glazed tiles. The floor should slope and be channeled below the foot of the stalls so as to carry off urine. This channel should be carried outside the house either into a drain or into some absorbent substance, as dry earth or sawdust, which can be removed to a manure heap at frequent intervals. The bedding of the stalls should be of wood-shavings, fern, peat-moss, or straw, and cow-dung should be systematically removed and the whole place washed out thoroughly at least once daily.

Contrast the foregoing sketch of model processes on the dairy farm with what is the usual order of things: the dirty and ill-ventilated cow-houses, the unwashed milker, the utensils cleansed with water from surface wells, springs, or contaminated streams, the cows without veterinary supervision, and the milk when drawn kept in close and dirty premises. Yet that is the kind of surrounding to which a great deal of our milk-supply is exposed at its source. When a separator is used to obtain the cream from the milk collected from various farms the danger of contamination of the milk is increased, inasmuch as the polluted milk from a

single farm will infect that of the whole area of collection. All the efforts of the dairymen to keep the milk free from bacteria will be in vain unless the milk be stored under proper conditions in the shop of the retailer and in houses of the consumers. It is, therefore, necessary to examine the conditions under which this universally used article of food is distributed in our towns.

THE RETAIL MILKSHOP.

From inquiries made in the parish of St. George the Martyr, Southwark, one of the poorest and most crowded districts in London, I find that for the most part milk is kept in open vessels standing in the shop of the retailer. The shop door is open, so that there is abundant facility for the pollution of the milk with the dust from the street, charged with bacteria of various kinds, of which I have shown that several are to be found in the intestine of the horse and of man. The only remedy that suggests itself is to continue to have the milkshops under the control of a central authority, so as to ensure the sterilising of vessels. A general recommendation might be given as to the disuse of open vessels for storing milk. In order to avoid the necessity of exposing the milk, the sterilised milk-cans received from the dairy might be fitted with a tap and the milk might then be drawn off as required. The necessary air-hole might be made by simply fitting into the top of the can a tube provided with a filtering plug of cotton-wool.

PUBLIC SERVICE OF STERILISED MILK.

So convinced have the sanitarians in various countries become as to the part played by milk as the vehicle of infection in summer diarrhœa that public establishments have been started for the supply of sterilised milk to the poor. In New York several such depôts have been at work for some years past and their example has been followed in other cities in the United States. A similar system was established in Paris some years ago at the Charité Hospital and afterwards at the Maternité Hospital, an example that was followed later by many other medical charities at crèches both in Paris and in the provinces. This system has been adopted at St. Helens, Lancashire, and the medical officer of health of that down, Dr. F. Drew Harris, reports excellent results as regards the diminution of infantile mortality, especially from diarrhœal diseases. The daily supply for each child costs 2*d*. and is divided among nine small bottles, which are fetched every day by the parents.

A word may be said here as to the relation of organically charged street-dust with bread. Many of our badly constructed bakeries are freely exposed to the street-dust, of which a certain amount cannot fail to reach the dough. Some years ago in a joint article read at the British Medical Association meeting in 1894[6] the view was advanced that micro-organisms were not destroyed in the interior of an ordinary loaf, so that pathogenic germs could be distributed by the agency of bread. This may be a possible factor in the origin of some cases of summer diarrhœa. On other grounds the re-modelling of our bake-houses upon scientific principles is much to be desired, and to a less extent a similar remark applies to the shops and other places where loaves are stored. There is much to be said in favour of sterilisation of the baker's loaf in the oven of the consumer.

STORAGE IN THE HOUSE OF THE CONSUMER.

If we ascribe to the dust of cities those undesirable qualities of fæcal pollution with which I think it may fairly be charged that conclusion leads to some principles with regard to storage in private houses. The larder as a rule is placed in a cool situation and in the majority of town houses it is in the area. The outer wall of the underground area is often in contact with the neighbouring soil, so that the walls of the larder become damp and mouldy. This close relationship between soil and larder is of some importance if we agree with those authorities who ascribe summer diarrhœa to micro-organisms that have their habitat in earth. Apart from the possibility of soil contamination in the average town larder, however, we have a constant exposure of larders, whether below ground or above ground, to the invasion of dust. The wonderful power of penetration of town dust is a fact familiar to everyone and has already been mentioned. We all know how it will creep between the pages of a closely shut book or into the folds of documents that are themselves stored away in apparently dust-tight drawers. When we come to a larder we find that the desire to provide free ventilation is rarely tempered with any attempt to exclude dust. Wire-gauze and perforated zinc blinds are used to ward off flies, but nothing is done to keep out the dust. The larder should be dry, with damp-proof walls and impermeable floor. It should be as far as possible dust-proof, a condition that could be attained by ventilating through small Tobin's tubes fitted with cotton wool filters. The larder should not be near any dust-heaps, water-closets, sinks, or drain ventilators. In the houses of the poor food is often stored in living-rooms, sometimes in cupboards, and sometimes on open shelves in rooms where the inmates sleep.

NOTIFICATION OF DIARRHŒA.

The notification of summer diarrhœa has been mooted from time to time and more or less cogent reasons have been advanced both for, and against, the proposal. The principle has been to a modified extent sanctioned by the Local Government Board by a circular letter issued in 1894 when cholera was threatened permitting sanitary authorities to make diarrhœa notifiable. That such a step, if general or universal, would entail an enormous cost is clear. The question is whether commensurate advantages would accrue to the community. One point seems clear—namely, that the small degree of infectiousness of summer diarrhœa would not enable the medical officer of health to check its spread by prompt isolation and disinfection. Nor would it be possible, even if it were desirable, to furnish hospital accommodation for the reception of patients suffering from so extremely prevalent a complaint. On the other hand, notification would enable us to obtain regarding the disease a vast mass of facts that at present is either lost or imperfectly gleaned from the tables of mortality. On the whole, the time does not seem to have arrived for the compulsory notification of summer diarrhœa. It is to be hoped that with an increased knowledge of the origin of the malady and with a more perfect system of urban scavenging and general sanitation epidemic diarrhœa will be gradually reduced within more manageable limits.

GENERAL CONCLUSIONS.

If we imagine the source, or one of the chief sources, of summer diarrhœa to be distributed in the dust of cities we find ourselves in possession of a hypothesis that explains many of the facts of the disease. As a dust it would lodge on surfaces or be floating in the air. A shower of rain would wash the air and cleanse the surfaces, and if the germs of diarrhœa were contained in the dust they would be carried away in the surface and storm-water. Such an explanation would account for the lessened prevalence of diarrhœa in wet summers. Dr. Newsholme alludes to this action of what he terms the "natural scavenger" rainfall. He attributes the comparative freedom of Scotch towns from diarrhœa to the greater freedom with which nature has provided its natural scavenger and in part to the greater efficiency of municipal scavenging. Then the dust-distribution theory would be closely connected with the permeability of road pavings. Not only would a macadam roadway provide a greater amount of dust, but it would be much more difficult to cleanse of organic matter. Wooden or asphalte or concrete pavements would give rise to less dust and be more readily cleansed. In most towns the road-paving is in a transition stage, so that it is impossible to get any exact statistics as to the influence of paving upon public health. Frequent and thorough scavenging is necessary to remove road-dust and the cleansing of impermeable paving is brought to a pitch of almost ideal perfection by systematic flushing with hose and hydrant. An extension of this important principle has been made by some local authorities by the hosing of courts and alleys. Dr. Hope of Liverpool,[7] already quoted, states that in the wet summer of 1891, when the diarrhœa mortality was only one-fourth of that in 1895, upwards of 900,000,000 gallons of water were distributed in Liverpool by rain which were absent in 1895. In this connexion Dr. Newsholme[8] has cited the interesting experiment carried out in Leeds by Dr. Spottiswoode Cameron. One district, comprising nearly one-tenth of the whole town, was specially cleansed on the approach of summer. That particular district was the only one in Leeds in which the diarrhœa death-rate did not agree with the excessive mortality of that year in other towns.

[6] Dr. D. Walsh and Dr. F. J. Waldo "Does Baking Sterilise Bread?" THE LANCET, Oct. 20th, 1894, p. 906.

[7] Public Health, July, 1899.

[8] Public Health, vol. vi., p. 153.

Dr. F. J. Allan, the medical officer of the Strand District Board of Works, has furnished me with some interesting facts with regard to the flushing of courts in his district. The practice was begun in 1882. At that time and up to the year 1891 both street-sweeping and dust-removal were done by contract, but since 1891 it was taken over by the local authorities who have performed the work more thoroughly. Flushing has become the chief method of cleansing and the daily removal of dust has been gradually instituted. The deaths per thousand from diarrhœa and enteritis during the last four decades were as follows:—

	1860-69.	1870-79.	1880-89.	1890-99.
Diarrhœa	0·87	0·84	0·64	0·45
Enteritis	0·10	0·05	0·12	0·19
	0·97	0·89	0·76	0·64

This steady decrease in the diarrhœa rate, whether due to the flushing or not, is encouraging in a district where the diarrhœa rate has for many years been constantly heavy. From these considerations there is evidently a strong conviction in the mind of some leading authorities in public health in Great Britain that both rainfall and efficient scavenging and flushing of streets and by-ways lessen the incidence of summer diarrhœa. They suggest two practical points: first, as insisted upon by various sanitary experts, the water-supplies of cities for public cleansing purposes should be free and unstinted; and secondly, the action of rain and flushing and scavenging must lessen summer diarrhœa by removing a surface pollution. One of the chief possible objections that may be raised against the surface or dust-distribution of the virus of summer diarrhœa is Ballard's observation that the summer rise of diarrhœa mortality does not commence until the four-foot earth thermometer has attained somewhere about 56° F., and declines with the fall of the earth temperature at that depth. He attributes little influence on diarrhœa through atmospheric temperature or through that of the more superficial layers of the earth as compared with the four-foot thermal conditions. This observation may be accepted as undoubtedly correct, but it is difficult to imagine how temperature at the depth of four feet below the earth could directly influence the distribution of so widespread a bacterial disease as summer diarrhœa. Indirectly, however, we may suppose that a deep earth temperature might have a considerable influence by maintaining a degree of surface warmth favourable to the growth of bacteria. Where the deep earth temperature is not high enough partly to compensate and check the nightly loss of heat by radiation it is clear that the surface bacteria would be exposed to the risk of inhibition or destruction by low and variable night temperatures. The localised incidence of summer diarrhœa in counties has, I think, been clearly proved by the tabular statements advanced in my first lecture. This fact is of importance as showing that under general conditions, which from year to year may be regarded as fairly common to all parts of a county, the distribution of diarrhœa therein is most unequal. Temperature, wind, and rainfall, therefore, cannot be the all-important factors of causation. Soil is a condition that often varies considerably, and many authorities have attached to it a position of first importance in the etiology of the disease. There can be no unvarying relation, however, established between particular soils and the incidence of diarrhœa. At the same time it seems highly probable that porous and made soils, especially when organically polluted, play a definite part in conveying the infection. It may also be pointed out that such soils would be dusty. In general conditions other than soil the various districts of a county will vary chiefly in the gradients and the way in which the streets and houses are constructed, arranged, and regulated.

GRADIENTS.

The flatness or the steepness of a district appears to have a decided influence in lessening the diarrhœa rate. On the theory of surface pollution this would readily be explained by the better cleansing action of rain; wind, also, under the same circumstances, would have a more thorough access between houses and streets.

ARRANGEMENT OF STREETS AND HOUSES.

Streets.—The narrower the streets the more would dust tend to accumulate and hang about in the air, as wind would not be able to sweep through them. Moreover, by the exclusion of sunlight a bactericidal agency would be shut out. The paving of the roadways is another point; macadam, for instance, gives rise to infinitely more dust than granite blocks, and these again than closely fitted wood blocks or asphalte. The cleansing of the streets is a further essential as regards the amount and the pollution of the dust therefrom. It is to be hoped that a fuller recognition of the composition of street-dust will lead to increased energy on the part of urban sanitary authorities as regards the cleansing and maintenance of good roadways.

Houses.—The grouping of the houses cannot fail to influence both the amount and the quality of the local dust. It is clear that the existence of numerous unpaved courts, yards, closes, and alleys, ill-cleansed and closely crowded by a poor population, must pollute the atmosphere with a great amount of undesirable material.

The condition, then, of narrow streets, macadam roadways, numerous unpaved and imperfectly cleansed courts, favours the creation and accumulation of dust organically polluted from various sources, human and otherwise. That danger may obviously be increased by a flat gradient and by the presence of a porous and organically polluted soil, also by a lessened average of cleansing wind and rain, and by a higher temperature that may favour bacterial growth. It is to be noted that the bad conditions mentioned are those that would be vigorously attacked by an energetic local sanitary administration. Indeed, in some instances careful attention to cleansing of streets and courts in the summer months has resulted in a definite decrease of diarrhœa. Where rainfall has been deficient an artificial substitute has been provided in the shape of systematic flushing by hydrant and hose. Where the soil has been unfavourable it has been shut out by impervious paving. Dusty and uneven roadways have been replaced by smooth hard surfaces. Courts and alleys have been first paved and then systematically cleansed and flushed. Streets have been widened to admit freely both sun and air, and their surfaces frequently and thoroughly cleansed. In addition to such precautions something is wanted in the better protection of food supples from pollution by organic dust. That may be effected to some extent by the use of sterilised milk and by the official regulation of milkshops, and in a far more universal measure by the more scientific construction and care of household larders.

The causation of summer diarrhœa is probably manifold in its microbial origin and manifold in its method of distribution. It is only by careful attention to all possible and probable causes that we hope for the reduction of a disease that causes so great a mortality amongst the inhabitants of the United Kingdom. Meanwhile, there seems to be good ground for the belief that a thorough application of the recognised principles of modern prevention will do so much to alleviate, if not altogether to abolish, the sufferings and death that follow in the train of an entirely preventable malady. Should the theory of the origin of epidemic diarrhœa in the dust of our streets be established then we should have to look for the hope of prevention in the future, not only to our local authorities for the better construction and scavenging of our roadways, but also to the engineers who provide us with horseless carriages and to the architects who design our larders and pantries. Last, but not least, we must look to the better education of the people as to the ever-present necessity of sound sanitation, and especially as regards the cleanliness and ventilation of dwellings and the proper storage of food, for, after all said and done, no great advance can be made in practical preventive medicine without the intelligent coöperation of the community.

THE PROPOSED NEW INFIRMARY AT NEWCASTLE.—To render available the bequest of £100,000 left by the will of Mr. John Hall for building a new infirmary at Newcastle to commemorate the Diamond Jubilee, the Mayor, Mr. Riley Lord, has acquired and paid into the bank the necessary £100,000. Mr. Hall's will granted three years for the completion of the fund, which has, however, been accomplished in one year. The infirmary will begin, therefore, with a capital of £200,000, and the Prince of Wales will lay the memorial-stone on June 20th.

THE AFTER-HISTORY OF 41 CASES TREATED BY OPERATION FOR DESTRUCTIVE HIP-JOINT DISEASE.

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IN a very able and candid paper read at the Clinical Society of London on Dec. 12th, 1879,[1] Mr. John Croft gave his experiences up to that date of excision of the hip for tuberculous disease. The cases then analysed amounted to 45 and appear to be the first published series of any magnitude of consecutive cases of excision of the hip occurring in the practice of one surgeon from which it was possible to estimate the intrinsic dangers of the procedure and the prospects of ultimate benefit. In the course of his very careful and honest analysis Mr. Croft showed that "six of the total number of deaths were attributable directly or indirectly to the operation," or nearly 13·5 per cent. Nine other cases died in the course of time but under conditions certainly not attributable to operation and one more succumbed which I gather ought not to have been operated on in his opinion. At all events, 13½ per cent. died as the result of the operation and within about four years 10 others. This gross mortality of 35·5 per cent. within about four years showed a very marked improvement on former statistics of the operation due in a great measure to the introduction of the Listerian methods of wound treatment. Probably such results had never before been achieved. In a later report Mr. Croft showed that his mortality had fallen to 12·6 per cent.[2] In the course of his remarks on his series Mr. Croft pointed out that with greater care as to the selection of cases and a clearer understanding of the nature of the destructive process, together with improvement of technique, a still further improvement would take place. That this forecast has been justified will, I think, be clear from an analysis which I now venture to make of all the hospital cases which have occurred in my own practice since the date of Mr. Croft's communication. The number (41) is nearly the same as in Mr. Croft's series and the analysis has been made almost precisely on the same lines. In the first place, with, perhaps, two exceptions of adults, aged 32 years and 20 years respectively, suffering from what may have been chronic pyæmic infection of the hip-joint, all were operated on for chronic tuberculous disease.

For the purposes of contrast with the experiences of 20 years ago I will further analyse this series in the way in which Mr. Croft has so ably done. In the first place, as in his work, "before operation was resorted to in any case every known reliable treatment suitable to the condition had been tried to arrest the progress of the disease." In my series this included as a rule the fixation of the limb on a double Thomas's splint, tonics and cod-liver oil, fresh air, and the best food procurable, and this treatment was carried out for months and often for years. In no case was an operation undertaken until there was evidence of *extensive formation of matter in the joint* and in all grave changes were found in one or both bones, from wide-reaching caries to the formation of sequestra in both the head of the femur and the acetabulum. I have never operated for that early disease, which has, rightly or wrongly, been the guide for some surgeons, especially abroad, in dealing with tuberculous disease of this joint. The cases have been dealt with at an obviously earlier stage than was formerly the case when this disease from its fearful mortality was regarded almost as *noli me tangere*, but never until an abscess had formed in the joint, and frequently a very large abscess extending for many inches into the thigh. At the same time my constant aim has been to operate before open sinuses had formed and the cavity had become infected with septic organisms. Nevertheless, eight had open sinuses at the time of operation and eight more are noted as having abscesses about to burst and several of them as "hot" and "pointing." These are the conditions which have appeared more than anything to influence unfavourably the immediate and remote results of such operations.

The next point for contrast between the two eras is that of the mortality directly traceable to the operation. In Mr. Croft's series this was shown to be either 13·5 or 15·5 if one case which he mentions apart (no doubt for good reasons) be included. As to my own series *none* have died before leaving hospital. But one died from marasmus some 18 months after. Whether this case should be debited to the operation or not is open to doubt; but if it is it is the only one. The history is briefly as follows. The patient was a boy aged six years. He had worn a double Thomas's splint for 12 months for tuberculous hip. There was a large abscess in front of the joint. An anterior incision was made. The head of the femur and the acetabulum were carious; the remains of the head were sawn off *in situ*; the acetabulum was gouged and flushed. Iodoform emulsion (*vide infra*). Drain used for 24 hours, then removed. On the tenth day there was union per primam. The last dressing was saturated accidentally with urine and the stitches became infected. He had to be sent to the Children's Hospital, as University College Hospital was closing for alterations. There the wound broke down and became putrid. Seven weeks later the patient was re-admitted at University College Hospital with a sinus which discharged for 17 months. This was dilated and the acetabulum was found to be perforated by a large abscess which drained into the rectum. The other left hip was now found to contain a large tuberculous abscess. Not long after (about 18 months from operation) the child died from marasmus.

Among the remaining cases which I have followed up as carefully as I think was possible only two are known to have died up to the present. The first succumbed five years after the operation from recrudescence of the disease and the formation of sinuses with apparently tuberculous meningitis. The wound of the operation had healed by first intention, and after six months on a splint the patient walked about for four years without any sinus. She then developed a sinus which was scraped and led down to an abscess, and she finally died with severe vomiting and a strabismus suggesting tuberculous meningitis.

The only other patient whose death from any cause I can trace up to the present (May, 1900) has the following history. The patient was a male, aged 20 years. He had had a kick from a horse in the groin 15 months before the operation (December, 1889). A week after the accident pain set in in the joint and lasted up to admission (Jan. 8th, 1891). An abscess formed in the joint a month before operation with starting in the limb. There was much solid œdema and two very large abscesses which had been twice aspirated previously on the upper and inner aspect of the thigh at the moment of operation (Jan. 8th, 1891). Extensive disease of the femur and acetabulum, probably *non*-tuberculous, was found. The diseased femur and acetabulum were dealt with through an anterior incision and the abscesses through two other incisions. Flushing and iodoform emulsion (*vide infra*). All the incisions were closed without drainage. Subsequently the wound had to be drained. He went home on April 3rd, 1891, "nearly well." This patient died on Feb. 20th, 1892, one year after operation, at home. From the friends' account the cause was probably pyæmia.

These three cases are the only ones, as I have said, whose deaths from any cause I have been able to trace during the 22 years over which the series extends. I have spared no pains year after year to find out what has become of them. They tabulate themselves as follows: cases *not* traced after leaving hospital, 11. Of these sound union on leaving is noted in 2. Unhealed, doubtful note, or "nearly healed," 9. Died 17 months after operation, 1; died five years after operation, 1; and died one year after operation, 1. Cases *traced* after leaving hospital: for over 12 years, 1; over 9 years, 3; over 8 years, 2; over 7 years, 1; over 5 years, 3; over 4 years, 1; over 3 years, 4; over 1 year, 2; long after, 9; total, 26. Several of these were seen at a much longer period after operation, but unfortunately no note was taken. Of those traced for years after leaving hospital there had been no recurrence after operation up to the time they were lost sight of in 14. Some recurrence was noted in 10 cases after some years, 2 after many months. But all of these 26 were in good health and walking about when last seen.

As to the functions of the limbs operated on, as seen (in all cases but two) years after, they were excellent. The

[1] THE LANCET, Dec. 27th, 1879, p. 943.
[2] THE LANCET, Feb. 8th, 1890, p. 281.

41 CASES OF OPERATION FOR DESTRUCTIVE HIP-JOINT DISEASE.

No.	Sex, age, right or left hip, date of operation and reference.	Duration of subjective symptoms.	Duration of objective symptoms; present state.	Operation; state of parts found; mode of dressing.	Immediate result of operation.	Ultimate result.
1	Male, aged 16 years. August 8th, 1877.	Nine months.	Latterly an abscess formed and was opened shortly before excision; very extensive disease.	Posterior curved incision. Washed with carbolic lotion.	Recovered slowly and left hospital March, 1878, looking ruddy and well.	Cannot be traced.
2	Left hip. August 17th, 1881.	Detailed notes missing.	—	Posterior curved incision. Washed with carbolic lotion.	Recovered and left hospital.	Cannot be traced.
3	Female, aged 11 yrs. Right hip. Aug. 15th, 1883. Hosp. Rep., vol. lxxiv., p. 191.	Seven years after a fall; lame ever since.	Sinus formed two months before followed by great swelling and pain. Flexion nearly right angle with adduction.	Posterior curved incision. Great trochanter and epiphysis removed. Disease extensive. Carbolic oil dressing with drainage.	Fomentations after first few days. Healing very tedious. Pus inclined to bag; had to be let out from time to time. Temperature usually raised.	Left University College Hospital Jan. 25th, 1884.
4	Male, aged six and a half years. Right hip. August 15th, 1883. Vol. lxxii., p. 204.	Duration not stated in notes.	Duration not stated in notes. Much swelling on admission. Sinus in front of joint.	Posterior curved incision. Extensive tuberculous destructive change of whole joint. Carbolic oil on lint with drainage.	Immediate result fairly good; went home with sinus. Returned much worse. Question of amputation at hip-joint. Operation refused by parents. Child taken home.	Left University College Hospital Oct. 15th, 1883. Some years later the patient came to me at my house with all sinuses closed and walking well. Alive and well June, 1892. Last sinus closed nine months ago. Leg five inches short, but very useful.
5	Female, aged four years. August 30th, 1883. Vol. lxxii., p. 542.	Four years limping with pain. No injury. Thomas's splint.	Duration of objective symptom not given in notes. On admission intense pain. Distinct clicking in joint under chloroform.	Posterior curved incision. Extensive disease of acetabulum and head, with sequestrum. Cartilage raised by granulation tissue. Chloride of zinc lotion for washing; carbolic oil dressing; Hamilton's splint.	Immediate result favourable. Temperature usually 98° F.	Left University College Hospital Oct. 11th, 1883. Last note in book says: "Healing nicely."
6	Male, aged six years. Right hip. Feb. 11th, 1883. Vol. lxxv., p. 694.	One year ago pain in knee and limping. Double Thomas's splint worn ever since at Eastbourne until March, 1883.	Duration of objective symptoms not stated. PS.—Abscess pointing in front of joint. Aspirated; only one drachm of thick fluid obtained.	Posterior curved incision. Femur sawn across close to trochanter. Acetabulum was scraped out. Two drain-tubes; carbolic gauze dressings.	Immediate result good. Temperature for a few days from 100° to 103·2° F., then nearly normal. Double Thomas's splint.	Went home with wound nearly healed Jan. 18th, 1884.
7	Male, aged six years. Right hip. Feb. 11th, 1885. Vol. lxxxiii., p. 159.	Pain and fixation began 19 months ago and increased steadily in spite of rest on double Thomas's splint for 12 months.	Abscess over front of joint for one month. Skin red; veins dilated; joint fixed.	Anterior incision, Gowan's osteotome. Abscess large. Head of femur removed, acetabulum scraped clean. Chloride of zinc to deep part of wound. Powdered iodoform in wound. Lister gauze dressing. Drain-tube.	Immediate result generally good. Some bagging of pus on inner aspect of thigh; had to be opened. Tubes left out at end of second month.	Left University College Hospital May 6th, 1885, with an open sinus. The latter soon healed and the patient walked about for some years quite well. Came back in 1889 with a sinus leading to the acetabulum and an abscess pointing above the ramus of pubis. This healed under prolonged treatment in University College Hospital. Limb flexed and adducted. Sinuses scraped by Mr. B. Pollard, 1894.
8	Male, aged four and a half years. Left hip. June 17th, 1885. Vol. lxxxiii., p. 157.	Injury 13 months ago; pain and limping ever since.	In December last flexion was nearly to right angles with abduction and eversion. PS.—Fulness in front and over the trochanter. No shortening.	Anterior incision. Neck of femur cut with Adams's saw. Acetabulum scraped. Carbolic spray. Zinc chloride in wound. Drain-tubes. Lister's gauze. Head of bone found to be quite broken down by tuberculous caries.	Immediate result on the whole good. By July 30th wound nearly healed. Sent to convalescent home July 31st on double Thomas's splint.	Seen April, 1888. One inch shortening; no rotation, adduction, or abduction. Can flex at will to right angle and bring heel to buttock. Wound soundly healed; walks well. Seen December, 1890. Walks well; two inches shortening; very little flexion; no adduction or eversion. Health very good. Wound perfectly sound. Seen quite recently quite well. Walks admirably.
9	Male, aged five years. Left hip. Sept. 22nd, 1886. Vol. lxxxvii., p. 418.	Pain and limping for six months. On Thomas's splint for six weeks before operation.	Duration of objective symptoms not stated. PS.—Swelling, pain, redness, and fluctuation in front of joint. Very little shortening. Head only partially dislocated; grating felt on movement.	Anterior incision. Head trimmed with Gowan's osteotome. Acetabulum scraped. Zinc chloride. Drain-tube. Sal. wool dressing. Head of femur and acetabulum extensively carious.	Immediate result good. Left University College Hospital on Oct. 30th, 1886, on double Thomas's splint with wound nearly healed.	Sinus formed October, 1888, and was scraped. Seen October, 1889. Wound soundly healed.
10	Female, aged eight years. Right hip. April 27th, 1887. Vol. [illegible], p. 111.	Injury four years ago with much pain. Treated at King's College Hospital. Abscess opened. Second abscess opened later at Alexandra Hospital. Left "cured."	A month before admission a lump formed over the hip which soon discharged. PS.—Pain, swelling, eversion, and one inch shortening. Temperature from 103° to 104° F.	Anterior incision. Much pus in joint. Head of femur destroyed. Acetabulum fairly healthy. Two drain-tubes. Chloride of zinc wash. Sal. wool dressing.	Immediate result good. Left University College Hospital on June 31st, 1887. Returned on Dec. 22nd for removal of tuberculous glands in the groin.	Seen at my house many months later. Wounds quite healed. Very little deformity.
11	Male, aged 10 years. June 24th, 1887. Vol.	Injury seven years ago, since which the patient has always complained of hip. In a hip hospital for eight months	Five months before admission the patient received another blow on the hip after which a lump formed. PS. [illegible]	Anterior incision. Cavity opened. Head of bone sawn off. Cavity scraped. Two drain-tubes. Iodo-	Immediate result good. Temperature raised for a few days.	Not traced.

10	**Female**, aged eight years. Right hip. April 27th, 1887. Vol. [illegible], p. 111.	Injury four years ago. Since much pain. Treated at King's College Hospital. Abscess opened. Second abscess opened later at Alexandra Hospital. Left "cured."	formed over the hip which soon discharged. PS.—Pain, swelling, eversion, and one inch shortening. Temperature from 103° to 104° F.	joint. Head of femur destroyed. Acetabulum fairly healthy. Two drain-tubes. Chloride of zinc wash. Sal. wool dressing.	June 31st, 1887. Returned on Dec. 22nd for removal of tuberculous glands in the groin.	
11	Male, aged 10 years. June 24th, 1887. Vol. xciii.	Injury seven years ago, since which the patient has always complained of hip. In a hip hospital for eight months and as an out-patient for two and a half years.	Five months before admission the patient received another blow on the hip after which a lump formed. PS.—Flexion to right angle; whole joint swollen, red, and tender. Two sinuses in front and externally.	Anterior incision. Cavity opened. Head of bone sawn off. Cavity scraped. Two drain-tubes. Iodoform and salicylic wool dressing. Sent to Eastbourne on August 14th with wound nearly healed.	Immediate result good. Temperature raised for a few days.	Not traced.
12	Male, aged 29 years. Right hip. April 11th, 1887. Vol. xcvii., p. 76.	Injury 12 months before operation. Pain increased after. Treated at University College Hospital, rest and extension; much relieved. Forced movement by Hutton, "bone-setter," April, 1887, followed by abscess.	Re-admitted July, 1887. Large fœtid abscess discharging badly by one sinus. Skin œdematous; general condition bad.	Anterior incision. Head of femur sawn off. Acetabulum scraped, joint washed clean. Drain-tubes in wound and sinus. Head partially destroyed, cartilage quite gone.	Wound healed rapidly except drain opening. Rapid improvement; left University College Hospital Oct. 20th, 1887, with small sinus draining a little sweet pus.	Left tube out in March, 1888; everything soon healed. Many months later the sinus re-opened a little but soon closed firmly. Is still weak on limb, but it is quite straight. Has grown very stout. Small sinus scraped October, 1895. Seen recently quite well.
13	Male, aged four years. Oct. 18th, 1887. Vol. lxiii., p. 345.	Injury 12 months ago. Six weeks later began to limp and complain of pain in hip. Double Thomas's splint November, 1886. Pain severe June, 1887. Abscess soon formed in front.	PS.—Abscess over the front of the joint; the skin was red and tender.	Anterior incision. Head sawn off. Joint well scraped and washed. Drain-tube and antiseptic dressing.	Immediate result good; retarded by measles. Left University College Hospital Nov. 17th, 1887, on double Thomas's splint.	Seen months later quite well; wound quite sound. Seen April 20th, 1891, quite well. Only half an inch shortening. Very slight flexion and adduction. Walks well. Seen May 27th, 1891. Walks very well. Hip quite sound, no trace of recurrence. Seen June, 1892, quite well; walks firmly; no trace of recurrence.
14	Male, aged five years. Right hip. July 1st, 1888.	12 months. Splint worn 10 months before operation. First case treated by hot-water flushing and closure of wound without any drain.	Some months during which a large abscess formed in front of joint. No appreciable shortening.	Anterior incision. Head of femur removed, acetabulum gouged and flushed. No drain-tube. Iodoform emulsions. Head of femur nearly quite destroyed; acetabulum extensively eroded. Sal. wool dressing.	Healed per primam. Sutures removed on the thirteenth day. The patient was sent home on double Thomas's splint.	Splint removed eight weeks after operation by mother without my consent and patient was allowed to walk. 12 months later the patient was running about without pain. There was considerable mobility of the joint; also slight flexion; the scar was soundly healed. During the summer of 1890 after scarlet fever a small soft nodule was observed under the scar; this was removed and healed per primam. The boy was shown at the Royal Medical and Chirurgical Society on Oct. 28th, 1890, quite well, all sound. Quite well 1892 (nurse's account). Seen quite well June 14th, 1892. Ran about well, no mischief about hip, but had cold abscess of the size of an apple in the right buttock. Seen quite well July 19th, 1893. Walked well without pain. Very slight flexion and a trace of eversion and adduction. Had occasional pain in the hip. Latter was quite sound. Seen March, 1894, quite well. Had had some aching behind the joint lately. At University College Hospital July, 1896. There had been lately a nodule of tubercle in scar now nearly healed. Otherwise quite well.
15	Male, aged six years. Right hip, July, 1888. Died from marasmus, 1888.	12 months. Double Thomas's splint worn for 12 months.	Duration of objective symptoms not known. Large abscess in front of the joint. No appreciable shortening.	Anterior incision. Head of femur sawn off; extensively eroded. Carious focus on saw-cut gouged. Acetabulum bare. Drain-tube for 24 hours. Iodoform emulsion. Sal. wool dressing. Gouging and flushing.	Healed completely on tenth day, when the stitches were removed and the patient was transferred to the Children's Hospital. The last dressing, however, had been allowed to become soaked with urine and to become putrid in this way; the stitches were inoculated with septic matter and broke down later in the Children's Hospital.	Seven weeks later was re-admitted to University College Hospital with sinus. About 17 months later this was dilated and acetabulum was found perforated by large abscess which drained into the rectum. The other hip at this time also contained large tuberculous abscess. Not long after the child died from marasmus.
16	Male, aged seven years. Right hip. November, 1888.	12 months. Splint worn only for 12 days before operation.	12 months, during which a large abscess formed in front of the joint. Skin very much thinned and discoloured.	Anterior incision. Head of femur eroded extensively, leaving very little to be removed by saw. Acetabulum deepened by erosion and osteophytes round margin. Gouged and flushed. No drain-tube; iodoform emulsion. Sal. wool dressing.	Healed at first, but scar gradually gave way again, the skin being so thin. An opening also formed at old aspirator puncture.	Boy got fat and strong, but still had a small sinus with a trace of discharge when he left for the country. Cannot be traced since.
17	Female, aged nine years. Left hip. Jan. 8th, 1889.	Six months. Double Thomas's splint worn four months before operation.	Four months during which abscess formed over front of joint. The head of femur had slipped out of socket partially and could be pushed in with a click.	Anterior incision. Head removed and acetabulum gouged clean and flushed. Abscess extended down thigh under femoral vessels to the inside; it was well scraped and flushed. No drain-tube. Iodoform emulsion. Sal. wool dressing.	Healed per primam. Sutures removed on the fourteenth day. Left University College Hospital on the sixteenth day with double Thomas's splint.	Wound remained soundly healed. Wore splint for six months, then began to walk about. 10 months after operation was in excellent health, hip soundly healed. The limb was shortened about three-quarters of an inch and foot was slightly everted; the limb was perfectly straight and there was considerable mobility of hip. Cannot be traced. Seen July, 1893. Walks very well. Has a small open sore on outer side of thigh low down. No trouble in hip. Re-admitted July, 1893. Died February, 1894, apparently from bursting tuberculous abscess into the abdomen, perhaps from tuberculous meningitis.

41 CASES OF OPERATION FOR DESTRUCTIVE HIP-JOINT DISEASE—(*Continued*).

No.	Sex, age, right or left hip, date of operation, and reference.	Duration of subjective symptoms.	Duration of objective symptoms; present state.	Operation; state of parts found; mode of dressing.	Immediate result of operation.	Ultimate result.
18	Male, aged five years. Left hip. June 8th, 1889. Left for home September, 1889.	Six months.	Over three months. Large abscess on the outer side of the thigh. One inch shortening.	Not much fluid in the swelling, but chiefly pulpy matter. Most of bone disease in neck of the femur. Acetabulum carious; gouged and flushed clean. Head of femur sawn off. Double Thomas's splint.	Sutures removed fourteenth day; wound was healed by first intention. Left hospital in three months wearing double Thomas's splint.	Some months after leaving hospital caught erysipelas on abrasion in the perineum. This passed off without any ill effect to joint which was soundly healed. Six months after operation all was well about joint; still wore splint as before. In March, 1891, was found to have a caseous mass under the skin on the outer side of the joint. Removed by Dr. Whittle; primary union. Walked well. Caseous mass found under skin outside hip, March, 1891. Boy walking as usual. Mass removed by Dr. Whittle, who wrote on May 31st to say that primary union followed and that all was now sound and the boy looked very well indeed. Re-admitted Nov. 11th with second scar breaking down and pulpy swelling round the hip. April, 1892, excellent health; all quiet about joint; one and three-quarter inches shortening. On Feb. 26th, 1893, the scar of my operation was perfectly sound. Dr. Whittle wrote that his scar on the outside of the joint where he opened an abscess had partially broken down. The tissues round the upper part of the thigh were sound otherwise and showed no abnormality.
19	Female, aged five years. June 8th, 1889. Right hip.	Nine months.	Six months. Fulness about the joint. No shortening. Deep-seated fluctuation. March 6th, 1894, child the picture of health. Runs about; one and a half inches shortening. Leg is sound and muscular. Scars sound. Dr. G. W. Whittle of Brighton.	Large deep abscess opened. Head and neck of femur were carious. Acetabulum was carious with a perforation of the size of the forefinger into an intra-pelvic abscess of the size of half a large egg. Head of femur sawn off, acetabulum and abscess gouged and flushed. Double Thomas's splint.	Sutures removed on seventh day. Wound perfectly united per primam. Left hospital in four months quite well, wearing double Thomas's splint.	Wore splint for six months after operation and grew fat and strong. Then began to walk about. Blew on hip December, 1890; walked about as usual until end of January, 1891, when an abscess was found outside joint about to burst. Opened and flushed by Dr. Whittle, who writes May 31st, 1891, to say all is soundly healed and child is in excellent health. April, 1892, excellent health; all quiet about the joint; less than one inch shortening. Seen by Dr. Whittle in January, 1893, walking with a stick or crutch, in the best of health.
20	Male, aged 11 years. Sept. 3rd, 1889. Left hip.	Eleven months. Double Thomas's splint worn for six months before operation.	Five months before operation an abscess began to form in front of the joint. Half an inch shortening. Cutaneous veins dilated and skin reddened over the abscess.	A large abscess opened over the joint extending under the tensor vaginæ femoris and over the origin of the rectus. Head of femur much eroded and acetabulum extensively carious. Gouged and flushed with hot water. Iodoform emulsion.	Healed per primam and remained sound ever since. Stitches removed on the twelfth day. Left hospital on double Thomas's splint on seventeenth day quite well; limb perfectly straight.	Boy rapidly improved and grew fat. About a month after operation there was some simple thrombosis of a deep vein of the leg; soon well. Was walking about now quite well. Seen June 14th, 1892; quite well; walked firmly; no trace of recurrence; one and a half inches shortening.
21	Female, aged nine years. May 23rd, 1890. Left hip.	14 months. Splint worn eight months before operation.	Eight months before operation an abscess began to form round the joint.	Anterior incision. Abscess flushed hot water. Diseased head removed. Acetabulum gouged clean. Iodoform emulsion.	No complications. First dressing on the twelfth day. Perfect union per primam. Stitches removed.	The patient was kept on double Thomas's splint several months and then allowed to walk. Seen at University College Hospital April 21st, 1893. Limb one and a quarter inches short; leg three quarters of an inch. Femur slipped up. There were slight flexion and eversion and very slight adduction. She walked well. The hip had been sound ever since.
22	Female, aged four years. Left hip. July 4th, 1890. Left for home on August 2nd, 1890.	12 months. Splint worn for four months before operation.	Some months before operation an abscess began to form in front of the joint.	Abscess opened and flushed with hot water. Diseased head removed with loose sequestrum. Acetabulum carious; gouged and flushed. Iodoform emulsion.	First dressing eleventh day; primary union. Stitches removed.	Wore double Thomas's splint for some months, then only at night. Beginning of 1891 began to walk. Seen April, 1891; was in the best of health; sound hip; beginning to walk alone with high boot. Limb perfectly straight; free flexion in hip. Re-admitted Dec. 14th, 1891, with a fluctuating swelling under the scar; opened, washed out, and closed. March 23rd, 1892, slight superficial sore. Walked well. September, 1892, quite well—"splendid." Re-admitted Jan. 14th, 1893. Since last seen had been out of splint, running about and going to school. Limb shortened and smaller than fellow; right foot six and a half inches, left foot five and three quarter inches. Total shortening one and a half inches = one and a quarter to femur, quarter to tibia. Good movement; no flexion; a little adducted, not everted. Flexion to 60°; rotation to 45°. Abscess under healed scar, which was thin. Abscess of the size of a Tangerine orange. General condition very satisfactory. Jan. 15th, 1893, abscess opened by excising old scar. Reached to upper border of acetabulum; carious bone scraped away. Flushed iodoform emulsion. Closure without drain. First dressing removed on the eighth day. Healed Feb. 10th, 1893.
23	Female, aged six years. Left	Began to limp about one year before operation. Wore double Thomas's splint seven	An abscess began to form a month before operation and reached soon down the front of	Two incisions one into front of abscess; the other in usual posi-	Primary union of both wounds. Soon after both scars were cut	It was perfectly plain that in the first two operations

23	Female, aged six years. Left hip. Jan. 21st, 1891. Left for home May 2nd, 1891.	Began to limp about one year before operation. Wore double Thomas's splint seven months. Mother died from phthisis.	An abscess began to form a month before operation and reached soon down the front of the thigh for five inches. Adduction and shortening.	Two incisions one into front of abscess; the other in usual position into front of joint. Head of femur, much diseased, trimmed off with saw. Sequestrum in acetabulum, which was caseous. Free gouging and flushing with hot water. Iodoform emulsion. Complete closure.	Primary union of both wounds. Soon after both scars were evidently inoculated from within with tubercle. Both were excised and the cavity was reflushed. The lower scar, evidently re-infected from below, was again included in two curved incisions and removed. The cavity, which was lined with tuberculous matter, was flushed and scraped and closed without drainage. Union was perfect and permanent.	It was perfectly plain that in the first two operations some pocket of the large abscess had been left with sufficient tuberculous matter to re-infect the rest of the cavity. But from the first the child began to improve in health and the last flushing was effectual. The joint, however, was effectually cleared by the first operation and remained sound. It was only the abscess cavity which showed re-infection. In February, 1892, everything was sound about all wounds; the child was well and walking about. May, 1892, quite well; all quiet about joint, one and three-quarter inches shortening. No trace of recurrence. Beginning to walk firmly. Seen November, 1892, walked well; no trace of recurrence, only a trace of flexion and a little eversion. Firm fibrous union. Jan. 20th, 1893, she was quite well and ran about; no sign of recurrence. Seen recently all sound.
24	Female, aged three and a half years. Right hip, Feb. 12th, 1891.	On admission inversion, adduction, and flexion with much pain and three-eighths of an inch shortening.	Abscess above and below Poupart's ligament for a month; fluctuation from one to the other. General condition good.	Extensive disease of the head and acetabulum. Three incisions were made, two into the abscess and one in the usual position into joint. Head of femur removed; acetabulum and abscess flushed with hot water; filled with iodoform emulsion. Complete closure of wound.	Union per primam. Stitches removed on the twelfth day.	Returned June 22nd, 1891. Scar slightly tuberculous and anterior abscess slightly refilled. Scar of excision dissected out; small track found leading to joint, flushed, scraped, filled with iodoform emulsion, and closed. Abscess of the size of a bantam's egg treated in the same way. May, 1892, seen lately by Mr. Marshall. The child was quite well; all quiet about joint. Jan. 23rd, 1893, seen by house surgeon at University College Hospital. Everything sound about the wound.
25	Male, aged 20 years. Left hip. Feb. 25th, 1891. Died Feb. 20th, 1892.	Kick of a horse 15 months before operation in groin. A week later pain set in in joint and had lasted ever since. Thomas's splint since May, 1890.	Abscess formed in January, 1891, with starting of limb. Aspirated twice before operation. Two large abscesses in the upper and inner part of the thigh with solid œdema and discolouration of skin.	No deformity; no shortening. Extensive disease of the femur and acetabulum, probably non-tuberculous. Two large abscesses were opened and the head of the femur was excised by a third anterior incision. Acetabulum was gouged and flushed with hot water. Iodoform emulsion. Suture of all incisions without drainage.	Temperature rose to 103·6° F. on the third day. Abscess distended. A few stitches were removed. 12 ounces of turbid fluid escaped. Drain-tubes were put in in all incisions. After this the temperature fell and the cavities shrank up well. The wounds were almost well on April 3rd, when he went home.	Wounds still discharging some weeks later when last heard of. He died on Feb. 20th, 1892, from pyæmia, according to friends' account, one year after operation.
26	Male, aged five years. Left hip. March 21st, 1891.	Three months' symptoms.	Seen for first time 10 days before operation. Treated with extension and weight. Fluctuation and three-quarter inch shortening.	Anterior incision; head of femur half destroyed with two small sequestra. Acetabulum carious; large abscess under adductors. Head sawn off, socket gouged and flushed with hot water; also abscesses. Extension by weight for 10 days after operation, then double Thomas's splint. Iodoform emulsion. No drain-tube.	Stitches removed on the tenth day. Healed everywhere except small superficial wound from pressure. The temperature rose the first 24 hours, then fell.	Sent home on April 25th. Skin wound almost healed, wearing double Thomas's splint. Reported "result excellent" by Mr. S. H. Burton of Norwich, June 23rd, 1891. Report by patient's mother, November, 1892: "Boy very well, never complains of his hip; goes about without crutches; is lame, of course."
27	Male, aged 12 years. Right hip. April 29th, 1891. Left for home May 21st, 1891.	Severe pain set in in hip three years ago. Hospital for Children, Great Ormond-street: weight and extension 10 weeks. Then Thomas's splint and high boot on opposite limb 14 days. Seemed quite well after this. Six months ago pain set in again. National Orthopædic Hospital. Thomas's splint again five months. Latterly in bed.	Extreme adduction and eversion. Very little flexion; pelvis was much tilted, producing two and three-quarter inches apparent shortening, real three-eighths of an inch. Much induration about the joint. Abscess forming in front of the joint with clear fluctuation. Glands in the iliac fossa enlarged. Boy seemed in fairly good health.	Anterior incision. Abscess flushed out, remains of head of femur removed with saw, acetabulum gouged and flushed with hot water. Iodoform emulsion. Silk sutures; no drainage. Sal. wool dressing. Sequestra removed and a shaving of great trochanter where it touches the neck.	Weight and extension for want of good splint, which was being made. First dressing tenth day. Primary union; all the stitches were removed. There was a little chafing on the edges of the wound. Second dressing sixteenth day. Union was good; a small sore patch where the upper part of scar looked chafed.	Temperature rose to 100·6° F. the day after operation, then fell and kept below 100° always. When the boy left for home on May 21th he looked very well and the wound was soundly healed everywhere. Examined July 6th, 1891. The wound had soundly healed in every way. He was still on splint. Seen at University College Hospital March, 1892: all sound; position good; walked well; to wear splint at night. Seen October, 1893: quite well; walked about.
28	Male, aged four years. June 19th, 1891. Left for home July 13th, 1891.	Good health up to seven months ago. Good family history. Thomas's splint three months. PS.—Flexion, abduction, great rotation outwards; ? shortening. Swelling and hardness half way down the front of the thigh and on the outside.	Great eversion, flexion, and abduction.	Anterior incision; large abscess extending down the thigh and over the brim of the pelvis to the back of the acetabulum, which was bare. Head was removed and the acetabulum scraped out. Abscess cleaned, scraped, and flushed with hot water, dried, filled with iodoform emulsion, dried out again and closely stitched up. Thomas's splint.	First dressing seventh day. Much serous oozing. Dressed as before. Second dressing fifteenth day. Stitches removed; wound looked well. Collodion. Third dressing collodion removed. Wound soundly healed and dry. Left for home on the thirty-eighth day looking well.	Temperature rose to 103° F. on the day of operation, then fell to under 100° for the rest of the week. Rose once again for unassignable cause.

41 CASES OF OPERATION FOR DESTRUCTIVE HIP-JOINT DISEASE.—(*Continued*).

No.	Sex, age, right or left hip, date of operation, and reference.	Duration of subjective symptoms.	Duration of objective symptoms; present state.	Operation; state of parts found; mode of dressing.	Immediate result of operation.	Ultimate result.
29	Male, aged six years. Oct. 2nd, 1891. Right hip.	Six months ago began with pain in the knee. Coughed up blood and sweated at night. Double Thomas's splint.	Wasting and quarter-inch shortening with slight adduction. Large abscess in front and behind.	Carious pits in front and large abscess. Gouged and scraped; flushed. Head was not removed.	Healed by first intention. Sent out to all appearances quite sound.	Not traced.
30	Male, aged eight years. Left hip. Nov. 24th, 1891. Left for home. Jan. 2nd, 1892.	General health had been good. Measles three months ago. Chicken-pox when an infant. Was now strong. Father and mother were healthy. Admitted Nov. 4th for pain in left hip and knee. Weakness five months but no pain at the beginning, only last three months. Weight extension.	Apparent lengthening half an inch. Real shortening five-eighths of an inch. Abduction and eversion; no permanent flexion. Enlarged inguinal and iliac glands. In front of joint and under tensor vaginæ femoris was an abscess. Pain on movement of the hip. No swelling behind the joint. Temperature 101·8° F.	Anterior incision two and a half inches. One ounce of brownish fluid was let out of abscess in the joint. Acetabulum and head of the femur were eroded and pitted and denuded of cartilage. Neck was sawn across. Calcareous sequestrum in acetabulum. Flushing and gouging of the whole joint with hot water; much granulation tissue evacuated. Iodoform emulsion. Deep silk sutures. Sal. wool dressing. No drainage. Double Thomas's splint.	Head pitted with tuberculous ulceration. Tubercles under periosteum of the neck. First 17 days the temperature was under 101°, then rose for 11 days gradually to 106·7° on the twelfth day; it remained between 105° and 101° for 16 days longer, then fell to normal and remained so until discharged for home. During all this time the wound was healing without any reaction and the boy had no other serious symptoms; he got thinner. The stitches were removed on the tenth day. The wound had quite healed; there was no swelling. The patient left University College Hospital on Jan. 2nd. Wound quite healed. Temperature was normal.	Re-admitted Feb. 9th, 1892, from convalescent home, with small tuberculous sore in the middle of scar of the size of a sixpence. There were no swelling and no tenderness. On Feb. 24th the scar and abscess were excised; both were superficial. Flushing. Iodoform emulsion. Wound stitched without drainage. Wound healed almost by first intention. No rise of temperature. The patient went home on March 9th. He had a moist spot in the scar for some months. When last seen, October, 1892, the scar had quite healed. The boy was very well. He was only to wear a splint at night. Seen Nov. 22nd, 1892. He was quite well and strong. He walked with crutches; had only recently left off splint. There was no trace of recurrence. Free movement above the hip. Re-admitted Nov. 1st, 1893, for chronic tuberculous abscess in left buttock. Scar of old wound sound. The boy walked without pain. Movement, flexion to right angle. Limb was usually flexed 10 degrees and slightly adducted. Shortening one and three-quarter inches = one and a half in femur, one quarter in tibia. Abscess was opened, flushed, and closed after iodoform emulsion Nov. 2nd. Second dressing fifteenth day. Union was perfect; wound was dry. Left University College Hospital on the twenty-first day. Temperature rose to 102·8°, then fell to normal. On Jan. 21st, 1898, the old scar was excised and the wound was scraped and flushed. He went out healed in 25 days.
31	Female, aged nine years. Jan. 1st, 1892. Right hip.	Under treatment of Thomas's splint and for four years before the operation. Adduction.	Wasting, but no shortening. Large anterior abscess. Eczema and pustules in various parts. Abscess hot.	Much destruction of head and acetabulum. Gouged, scraped, and flushed through two anterior incisions.	Did not heal well. Scar was cut out with renewed flushing and scraping on Jan. 20th, 1892. Went out with sinuses.	Re-admitted June 8th, 1895, for sinuses.
32	Female, aged 14 years. Feb. 10th, 1892. Left for home, April 9th, 1892. Left hip.	Always strong except for present affection. Family history was not good. Fell downstairs four years ago. About a year later became lame, with pain in left hip. Rest on splint 11 weeks, then crutches. Then hospital for three weeks, without benefit. Crutches and splint ever since. Pain growing worse.	Large abscess now on outer anterior aspect of the joint from two inches below the trochanter to the middle of the thigh very deep among muscles. One and a quarter inches shortening. There was no deformity. There was great pain on movement. Large iliac gland. No abnormal temperature.	Operation as in last case. Large quantity of matter evacuated from joint, together with several sequestra. Head of femur was destroyed. Acetabulum partially destroyed; cartilage flaking away during operation. Gouged, flushed with hot water; iodoform emulsion; sutured with silk; sal. wool dressing. Double Thomas's splint.	Dressed third day with fresh wool. On twelfth day wound was perfectly healed. Stitches removed on the nineteenth day. Wound perfectly healed. March 23rd scar was excised on account of small nodule of tubercle in the centre. Small track under it going down to the acetabulum. The wound healed perfectly in a few days per primam.	Child went home on April 9th looking quite well and with everything quiet about the hip. After the first operation the temperature rose to 102·2° F., then came down to normal on Nov. 19th, 1892. I heard from Mr. T. P. Lowe of Bath that patient was well and nimble on her feet. Runs downstairs. Limb considerably shorter than the right. Absolutely no pain. There was a very small sinus in the centre of the scar. On Nov. 18th, 1892, Mr. Lowe wrote that the patient ran about nimbly. There was no pain. She was growing fat. There was a small sinus in the centre of the scar.
33	Male, aged nine years. Right hip. May 25th, 1892. July 19th, 1892.	Well until six weeks ago. Family history was consumptive. Limping began more than two years ago. Thomas's splint. Then extension at home. Abscesses formed; appetite fell off, with emaciation. Now looked thin and delicate.	No flexion but strong adduction and eversion. Shortening half an inch. Swelling of the trochanter. Small sinus on the outer part of trochanteric region; two recent scars. Movement very painful. Temperature 101° F.	Sinus was enlarged, scraped, and flushed with hot water. Then usual anterior incision into the joint which was full of broken-down tubercle. Head of the femur was very carious. The neck was sawn through. Focus on cut surface gouged out. Acetabulum gouged out and whole wound flushed with hot water. Iodoform emulsion. Sinus dissected out with strip of damaged skin. Silk sutures. Sal. wool dressing. Drain-tube in outer wound.	The portion of head removed was riddled by tuberculous osteomyelitis. First dressing fifth day. Tube removed from outer wound, appeared to be healing. Parts swollen. Second dressing seventh day. A probe was passed into the wound and much matter let out. Drain-tube in anterior wound. The abscess was difficult to drain. The child's general health was good. June 29th, under gas and ether, incision was made on the inner aspect of the thigh into the abscess which would not drain. Scraped and flushed. Drain-tube. Boric dressing. Left for St. Mary's Hospital on closing of University College Hospital. Sinuses were still open.	Not seen since. The temperature was 103·3° after operation (101·3° before operation), then fell to under 101°, with occasional rises.
34	Male aged two years, March	Family history of phthisis on mother's and father's side;	Two sinuses discharging foul pus.	Skin containing sinuses excised.	Portions of the head and acetabu-	

				Damaged skin. Sinus swabbed. Sal. wool dressing. Drain-tube in outer wound.	St. Mary's Hospital on closing of University College Hospital. Sinuses were still open.	
34	Male aged two years, March 15th, 1893. Left hip. Discharged May 11th, 1893.	Family history of phthisis on mother's and father's side; both phthisical. Disease began at seven months. No shortening. Movement restricted. Fulness of buttock. Flexion to right angle. Two sinuses.	Two sinuses discharging foul pus.	Skin containing sinuses excised. Carious head of the femur and acetabulum removed and scraped and flushed. Sequestra of the size of the tip of the little finger were removed with small pieces of cartilage. Emulsion. Wound stitched without drain. Sal. wool dressing.	Portions of the head and acetabulum with much progenic membrane removed. First dressing ninth day, all stitches breaking down. No union. Sloughing of skin. Hot fomentations. Healed up to small sinuses with few drops of pus by April 14th.	Temperature fluctuated between 105·4° F. and 99° until the end. The wound had almost healed when the patient left the hospital.
35	Male, aged five and a half years. Jan. 11th, 1894. Left hip.	Fell two years before operation. Pain and lameness ever since July, 1892. Under splint treatment since onset.	Swelling in groin since onset. Great flexion. Slight shortening. Joint fixed.	Caries of the head and acetabulum with much broken-down tubercle. Remains of head removed. Cavity gouged and flushed; closed without drain.	Union per primam in spite of the dressings being wet with urine.	Examined December, 1896. Sound union ever since; no trace of fresh disease.
36	Male, aged 32 years. Jan. 17th, 1894. Right hip. Chronic pyæmia.	—	—	Capsule full of gelatinous stuff. Destruction of cartilage and caries of head, not of acetabulum. Gouged, flushed, and closed. Iodoform emulsion; no drain.	Did not heal per primam, but very little pus. Was healed in 56 days.	Seen later soundly healed and beginning to walk.
37	Female, aged nine years. March 7th, 1894.	Symptoms for four years. Treated on splint ever since with some improvement at first.	Abscess has recently formed, but position is good.	Extensive caries of the head, neck, and acetabulum. Gouged, flushed, and closed without drain.	Union per primam.	Remains well up to date (1899). Goes about on a tricycle. Is quite sound. (Mr. W. Beresford of Egham.)
38	Male, aged 37 years. May 25th, 1894.	"Sciatica" in 1894. Treated from October to December, 1894, at University College Hospital. On splints up to date.	—	Very large abscess in Scarpa's triangle and behind the trochanter. Head very carious and cartilage destroyed. Acetabulum was much diseased. Sequestrum was loose, gouged, flushed, and closed without drain.	Notes not quite clear, but there was accumulation of serum which required evacuation. Went out on third day on double Thomas's splint.	Seen at University College Hospital January, 1896, with firmly healed scar. Walked well without the splint, which was then left off.
39	Male, aged 19 years. July 9th, 1896. Right hip.	Inflammation of the lungs February, 1894. Bad health ever since. Typically tuberculous. April, 1896, great weakness of the right leg and unable to walk.	Abscess formed 14 days before admission and burst a few days before. Discharging ever since.	Anterior incision; large abscess. Head and neck were carious; acetabulum also. Flushing; iodoform emulsion. Wound closed without drain.	Wound healed per primam but opened later and discharged for a long time. The wound was reopened by Mr. B. Pollard, Sept. 3rd, 1896, flushed, and scraped as before. After this it became septic and very severe suppuration lasted a long time.	Re-admitted Feb. 1st, 1898, for foul sinuses; scraped and drained. Last seen June 18th, 1898. Sinuses were still open. Seen at University College Hospital on Jan. 8th, 1900. All the sinuses had healed soundly. He walks well. The limb is straight. Probably now has tubercle of left kidney.
40	Male, aged 13 years. Feb. 24th, 1898. Left hip.	Pain in the knee for four months. Treated in hospital at Basingstoke for 14 weeks.	Great swelling of the upper part of the thigh. The skin was dusky and œdematous. There was fluctuation at one spot. There was one inch shortening. The limb was extended, everted, fixed, and painful on passive movement.	Anterior incision; much matter evacuated with sequestrum. Head and acetabulum were deeply carious. Remains of head removed; acetabulum gouged; flushing; iodoform emulsion; wound closed; no drain.	Wound did not heal perfectly. The patient left the hospital on the fifty-third day; the wound apparently healed. Splints.	Mr. F. Stokes of Basingstoke reports, April, 1900: "One sinus still discharging. Gets about without any trouble. No special flexion."
41	Male, aged 21 years, October, 1898.	Strained left hip, Christmas, 1897. Thomas's splint put on April, 1898, and wore it until operation in October, 1898.	Abscess recently formed on front of joint.	Large abscess. Head of bone and acetabulum carious. Head removed, gouged, scraped, flushed. Closed without drain.	Wound healed per primam. Cavity was filled with serum and required aspiration. He left University College Hospital in 1898 healed, on splint which he wore until March, 1899. At Whitsuntide he felt tightness in the hip and soon after a swelling appeared. He was admitted in June, 1899, with skin red and thin at outer side of old scar. Skin around the scar was excised; the tracks were washed out, filled with iodoform emulsion, and stitched up.	Old scar and some skin were excised and an abscess was found underneath. Flushed, exposed, and closed without drain. Wound healed per primam. Seen May, 1900. Quite sound; looks in good health; is walking with stick.

patients walked well and without pain. There was, of course, shortening, but this is not escaped by those who have healed up without operation and even without any obvious abscess. How often have we seen patients treated on splints for years recover without abscess and yet with two or three inches of shortening. But that is hardly the question here. All the patients in my list suffered from softening and abscess in their hip-joints, and this matter had to be let out on all the ordinary rules of surgery, and at the same time any diseased bone present was removed by the most conservative methods known. The only question, it appears to me, worth considering is whether such matter and disintegrated bone should be allowed to make its way to the surface and limb or whether before it has done so it should be evacuated by operation. The latter has been the course pursued in all the above cases. And in 26 in which the wound was at once closed without drainage 14 remained soundly closed for more than one or several years. The 12 remaining required subsequent treatment of one kind or another for recurrent nodule or simple sinus. This consisted in merely scraping a sinus in open cases or perhaps applying an ointment and in cases showing a nodule of recurrence in excising the latter and closing the resulting wound without draining, primary union being usually the result. In only one of these cases treated by closure of the wound without drainage was any really serious recurrence known—namely, in the case alluded to where after four and a half years of sound healing recrudescence of tubercle in the joint took place which went on to a fatal issue.

The routine treatment since the year 1888 has been as follows. A two and a half inch anterior incision (Parker) into the abscess in the joint. Flushing out of the latter with hot sterile water. Remains of head and sequestra removed with flushing gouge, aided in a few cases by lock-saw. Acetabulum gouged clean even into pelvic abscesses in some cases. All the operation cavity scraped and flushed clean with sterile water and then dried. A small quantity of iodoform emulsion is then poured in and any excess squeezed out. Careful suture of superficial wound without drainage. By this method 26 cases were treated and two more with the addition of drain-tubes for a time. Of the latter one was the case fatal after 18 months from marasmus, the wound never having quite closed. The other left hospital with an open wound.

In the cases (eight) in which open sinuses existed at the moment of operation the track was as far as possible excised between two elliptical incisions, the rest of the operation being carried out as above, except that drain-tubes had to be used as a rule. When "hot" abscesses were present drainage was as a rule also necessary. Had it been possible to reach these two classes of cases before sinuses or hot abscesses had formed the results would have been very much better. In every case the aim of operation has been to remove all the diseased tissues with a minimum of interference with those structures of the joint which could be regarded as sound. That this has been accomplished without any undue strain upon the patient's resources is proved by the fact that no death has taken place within one year of the operation. Indeed, the procedure, aided by Mr. Parker's anterior incision and combined with hot-water flushing, has shown itself to be safe from serious shock. That it has been relatively effectual in removing the local disease is proved by many of these cases. That it should not have been so in all is probably rather due to the local complications of extensive disease and perhaps to a general vulnerability of particular patients rather than to intrinsic defects in the procedure. It is further interesting to note that in none of these cases was the operation followed by any of the "accidental wound infections" or by immediate acute tuberculosis as the result of disturbance of local foci. That patients once infected by tubercle in a joint remain vulnerable in and about that joint and also liable to the disease in other places for a long time is also clear from some of these cases.

If any of my medical friends practising throughout the country can give me more recent information in regard to any of these cases which may have come under their eye I shall feel very grateful.

Since this paper was written I have seen the case that is numbered 14. There was a cold abscess on the outer side of the thigh below the trochanter. The wound was quite sound and the patient walks well and looks in excellent health. I have also seen another old patient whose notes were overlooked and who ought to have been included in this series, to follow Case 38, and bring the total of the series up to 42. The case is that of a boy, aged nine years, on whom I operated on May 25th, 1895. His history was that he had been healthy until one year ago. Then he began to have symptoms of hip disease and also of pulmonary phthisis. The family history was bad. He wore a Thomas's splint for four years to correct flexion, adduction, and inversion of the thigh, and the limb became fairly straight, but there was half an inch shortening. On a later occasion he came with an abscess in the joint, over which the skin was red and thin. An anterior incision was made and the head of the femur and the acetabulum were found carious. The diseased bone was removed with saw and flushing gouge. The abscess was scraped and flushed and iodoform emulsion was introduced. The incision was closed without a drain and union took place per primam. The patient was re-admitted in July, 1895, with a small abscess under the scar. The scar was incised and the abscess was scraped and flushed. He left the hospital on July 24th with a healing scar. I saw him this month at the hospital, when he was walking well and with the scar perfectly sound (May, 1900).

Harley-street, W.

CONGENITAL WORD-BLINDNESS.[1]

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I HAVE already published in the columns of THE LANCET[2] four different papers dealing with distinct varieties of letter- and word-blindness, and the present paper, describing another variety, shows that the subject is not yet exhausted. Strangely enough the two cases which form the subject of this paper were brought under my notice within two months of one another. They did not come accidentally before me but were brought to me for consultation by the medical attendants in each case who suspected that the difficulty in learning to read might be due to some cerebral cause. I will, in the first place, record the clinical facts in two cases and thereafter will briefly discuss and comment upon them.

CASE 1.—A boy, aged 11 years, was at school for four and a half years, but was finally sent away because he could not be taught to read. His father informed me that he was a considerable time at school before the defect was noted, as he had such an excellent memory that he learned his lessons by heart; in fact, his first little reading-book he knew by heart, so that whenever it came to his turn he could from memory repeat his lesson, although he could not read the words. His father also informed me that in every respect, unless in his inability to learn to read, the boy seemed quite as intelligent as any of his brothers and sisters. His auditory memory was excellent and better than that of any of the other members of the family. When a passage was repeated to him aloud he could commit it to memory very rapidly. When I first saw the boy and his father at the Glasgow Eye Infirmary I asked them to call on me at my house, and I wrote down the address on an envelope. A few days thereafter the father could not find the envelope, but the boy at once repeated the address correctly, having remembered it from hearing me state it once. I examined the boy first on March 4th, 1900, when he seemed a smart and intelligent lad for his years. He knew the alphabet by heart, repeating it rapidly and correctly. He could recognise by sight, however, only a very few letters and those not with any degree of certainty. He could spell correctly most simple words of one syllable such as "cat," "dog," "man," "boy," &c., but he could not recognise by sight the simplest and commonest words, such as "the," "of," "in," &c. He had no difficulty in recognising all other visual objects, such as faces, places, and pictures. On each page of the little primer in which I

[1] A paper read before the Glasgow Southern Medical Society, May 3rd, 1900.

[2] THE LANCET, Dec. 21st, 1895, p. 1564; Nov. 21st, 1896, p. 1451; Feb. 12th, 1898, p. 422; and Jan 14th, 1899, p. 83.

tested him there was a picture of some object which was followed by some simple letter-press about it. He at once recognised each picture—e.g., a cat. I would then ask him to spell the word which he nearly always did quite correctly. On asking him to pick out the word "cat" on the page he was unable to do it. I repeated this experiment on page after page of the little primer. On testing him with figures I found that he could repeat from memory fluently and correctly numbers up to 100. He could also perform mentally simple sums of addition. He could not, however, recognise all the figures by sight, but he knew them better than the letters and recognised a greater number of them. Since March 4th I have seen the boy every week; I last saw him on April 22nd. I asked the father to keep him constantly practising at his alphabet and at the figures up to 50. By dint of constant and persevering practice during these seven weeks he is now able to recognise many letters of the alphabet, but he has not mastered them all. Still, the result of the seven weeks' work gives us the hope that by perseverance he will gradually acquire the power of recognising the letters by sight. Whether he will ever be able to acquire the visual memory of words, so as to read by sight, is, however, very doubtful. The task of acquiring the visual memory of words is immensely greater than that of acquiring the visual memory of letters, of which there are but 52 in the English alphabet, including capital and small letters. But if he acquires the visual memory of the letters he will be able to read slowly by spelling out aloud each word letter by letter and thus appealing to his auditory memory which is excellent. His progress with the figures was much more rapid. He can now recognise them all up to 50. His father has always observed that he did not experience the same difficulty with figures as with letters. As his father expressed it, "They came more readily to him."

CASE 2.—A boy, aged 10 years, was brought to me by his father on Jan. 8th, 1900, to see the reason of his great difficulty in learning to read. The boy had been at school for three years, and had got on well with every subject except reading. He was apparently a bright, and in every respect an intelligent, boy. He was learning music a year ago and made good progress in it, his teacher expressing great satisfaction at the end of the year. In all departments of his studies where the instruction was oral he made good progress. His father, a medical man, thought that his great difficulty in learning to read might be due to some visual or cerebral defect, and therefore he brought him to me. It was soon evident, however, on careful examination that the difficulty in learning to read was due not to any lowering of the visual acuity, but to some congenital deficiency of the visual memory for words. He knew and recognised by sight all the letters of the alphabet, but his stock of word-memories was very limited, so that he could not read fluently or rapidly but required constantly to pause and spell out the word letter by letter. Such short familiar words as "the," "in," "on," "of," "to," &c., he recognised at once, but more uncommon words, even when of one syllable, such as "tub," "rug," he was unable to recognise by sight alone until he had spelled them out aloud letter by letter. Of course this is a stage through which we must all pass in learning to read, but in this lad's case he has been much slower than usual in acquiring the visual memories of words, no doubt owing to some congenital defect of his visual memory centre which makes it much more difficult for him to retain and store up the visual memories of words. This is the real explanation of the difficulty in learning to read. It is not owing to any defect of his general intelligence or to any diminution of visual acuity. His father has noted that the boy never reads for amusement. As his father expresses it "it seems to take a great deal out of him." Figures he reads very fluently both singly and in complex combinations. The boy himself says that he reads figures more easily and with less effort. He performs simple sums correctly.

These two cases form excellent examples of different degrees of a condition which has been described as "congenital word-blindness," in which there is a congenital deficiency of the visual memory centre for words and letters. I am able to quote two other cases.

CASE 3.—Dr. W. Pringle Morgan [3] reports the case of a boy, aged 14 years, bright, intelligent, and quick at games and in no way inferior to others of his age, unless in his inability to learn to read. The greatest difficulty was experienced in teaching the boy his letters and it was thought that he never would learn them. He had by constant application acquired a knowledge of the letters, but though at school and under tutors for seven years and in spite of the most persistent efforts, he could only with difficulty spell out words of one syllable. Words written or printed seemed to convey no impression to his mind, and it was only after laboriously spelling them that he was able by the sound of the letters to discover their import. He read figures fluently and could do simple sums correctly. The boy himself said that he found no difficulty in reading figures.

CASE 4.—Dr. Bastian, [4] in his recent work on aphasia, has reported briefly a case belonging to this category. A youth, aged 18 years, well grown and healthy-looking, and belonging to an intellectual family, had always been a great favourite with his tutors and companions and excelled in all school sports. He was extremely slow in learning to read and his father said that they almost despaired of his doing so. Algebra and arithmetic gave him little trouble.

A careful consideration and analysis of the symptoms in these cases lead directly to the conclusion that the difficulty in learning to read is due to some congenital defect in the visual memory centre for words and letters and it may be described as "congenital word-blindness." In my book [5] recently published I have pointed out that in learning to read by sight there are two distinct stages. The first stage is to store up in the visual memory the individual letters of the alphabet. This under normal circumstances is done with comparative ease and rapidity, there being only 26 letters in our alphabet, or, taking capital and small letters, 52 visual images in all to be acquired. The memory of words is first registered in our auditory memory—i.e., we are able to spell a word before we are able to recognise the word by sight alone. When the individual has acquired in his visual memory a knowledge of the individual letters he is able to read words by spelling out aloud each letter and thus by appealing to his auditory memory he gets the proper word; or sometimes he may simply be seen to move his lips, spelling silently each letter and thus appealing to his memory of speech movements, or glosso-kinæsthetic memory as it has been called by Dr. Bastian. [6]

To reach the second stage in the art of reading is a much more formidable task, requiring for its accomplishment a much longer period of time. This second stage consists in the gradual acquirement and storage of the visual memories of words. When this is accomplished the individual reads not by analysing each word into its individual letters but by recognising each word as a separate picture. The words then cease to be for such an individual simply a congeries of letters; each word is regarded rather as an ideogram, picture, or symbol which suggests a particular idea. The individual now recognises a word, just as he recognises a landscape or a familiar face, by its general outline and form without resolving it into its constituent details. He has now learned to read by sight and can skim over the pages of a book with great rapidity. When he looks at a printed or written word he can instantly interpret it by comparison with the word-image on his visual memory without having recourse to his auditory or glosso-kinæsthetic memory.

With this understanding of the processes involved in acquiring the art of reading by sight our cases became quite clear and intelligible. The difficulty experienced by these patients in learning to read arose from the fact that their visual memory for words and letters was congenitally defective. I have shown in my former papers that there is a definite cerebral area within which these visual memories of words and letters are registered—viz., the angular and supra-marginal gyri on the left side of the brain in right-handed people. If there be any abnormality within this area, due either to disease, to injury at birth, or to defective development, it is easily conceivable how such an individual should experience great difficulty in learning to read. The degree of difficulty may vary greatly in different cases.

The case first described is the most striking. After four and a half years at school the boy had not acquired the visual memory of all the letters of the alphabet. He had not yet passed the first stage in the art of learning to read by sight.

[3] Brit. Med. Jour., Nov. 7th, 1896.

[4] Aphasia and other Speech Defects, London, 1898.
[5] Letter-, Word-, and Mind-Blindness, London, 1900.
[6] Loc. cit.

The contrast between his visual memory for words and letters and his auditory memory was very striking. Although he had not been able to learn to recognise by sight the letters and words in his little primer he could repeat the contents of the book by heart. He could repeat the alphabet correctly and rapidly, but he could only recognise some of the letters by sight and that often after many mistakes. He could spell rapidly and correctly most words of one syllable such as "cat," "dog," "boy," "man," &c., but he could not recognise by sight one of these words. Even such common words as "the," "of," "in," "to," &c., he could not recognise by sight although he could spell them quite correctly. The failure of visual memory was for words and letters only. It did not extend to objects, persons, or places. Pictures of all kinds he recognised at once. It was therefore perfectly clear that the difficulty lay in the failure of the visual memory for letters and words. In this lad's case the defect was extreme, as even after years of practice he had not been able to acquire the visual memories of all the letters of the alphabet. On testing his visual memory for figures I found that this was not so defective. He made many mistakes, but he knew them much better than the letters of the alphabet. He had not practised them for some time and his father said that he knew them pretty well at school. In order to compare the visual memories for letters and for figures I asked him to spend the next four weeks in learning the alphabet and also in learning the figures up to 50. He had thus nearly the same number of visual images to acquire in each case. When he returned I found his knowledge of the letters to be somewhat improved, but he recognised correctly all the figures up to 50. His father has observed that he learns the figures much more rapidly than the letters. As he expressed it "they come more readily to him." He could perform mentally simple sums in addition.

In my second case the lad, although reading imperfectly and with great effort, had no difficulty whatever in reading figures even in the most complex combinations. In the third and fourth cases quoted there was no difficulty with figures. The facts observed in these four cases regarding the reading of figures confirm the observations previously made and the deductions drawn therefrom in my book on "Letter-, Word-, and Mind-Blindness." It is there argued that the complete functional independence of the visual memories of letters, words, and numbers, as evidenced by the fact that many patients completely word- and letter-blind can still read figures, could only be satisfactorily explained by anatomical independence—i.e., that these memories were registered in different areas of the cerebral cortex. From this point of view it is easily understood how these four patients, while experiencing the very greatest difficulty in learning to read letters and words, had little or none in learning to read figures.

The second case belongs undoubtedly to the same category as the first, but the defect is not present in such a marked degree. The patient had passed the first stage in learning to read—i.e., he had acquired the visual memory of all the letters of the alphabet. His difficulties had been manifested in the slowness with which he had acquired the visual memory of words. After being three years at school he could recognise by sight the most common and familiar words, but his stock of word memories was very limited, so that in reading he had to pause at most of the words and spell them out letter by letter and so get the word by appealing to his auditory memory. Even unfamiliar words of one syllable, such as "tub" and "rug," he was unable to recognise by sight alone until he had spelt them out aloud letter by letter. Another very significant fact about this boy, who was otherwise very intelligent, was the fact, told us by the father, that he never read for amusement. As his father expressed it, "reading seemed to take a good deal out of him." There can be no doubt that in the case of this boy there is some congenital deficiency in the centre for the visual memory of words whereby the functional activity is lowered and, therefore, the process of acquiring and storing up the visual memories of words is rendered enormously more difficult. In the case of this boy, however, the fact that he has already made considerable progress causes us to entertain the hope that with patience and perseverance he may yet learn to read fluently by sight.

Dr. Pringle Morgan's case briefly quoted was a very similar one. Great difficulty was here experienced in the acquirement of the letters, but by dint of perseverance these were mastered. The patient, however, had been unable to acquire the visual memories of words, unless a few simple and common words, and could only read by spelling out aloud the words letter by letter. Dr. Bastian's case, where the patient, intelligent and alert in other respects, experienced the greatest difficulties in learning to read, although not recorded with sufficient detail, no doubt belongs to the same class.

Although I have not been able to bring forward more than these four cases as illustrations of this congenital form of "word-blindness" I have but little doubt that these are by no means so rare as the absence of recorded cases would lead us to infer. Their rarity is, I think, accounted for by the fact that when they do occur they are not recognised. It is a matter of the highest importance to recognise the cause and the true nature of this difficulty in learning to read which is experienced by these children, otherwise they may be harshly treated as imbeciles or incorrigibles and either neglected or flogged for a defect for which they are in no wise responsible. The recognition of the true character of the difficulty will lead the parents and teachers of these children to deal with them in the proper way, not by harsh and severe treatment, but by attempting to overcome the difficulty by patient and persistent training.

Glasgow.

THE INCUBATION PERIOD OF PLAGUE.

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THE term "incubation period" has frequently been employed in a somewhat vague and indefinite manner. If, as there is every reaon to believe is the case, infective diseases are caused by specific organisms which gain access either to a mucous surface—as, for example, in cholera—or by penetrating the tissues—as in bubonic plague—the term "incubation period" should have a strictly limited significance. It should be held to cover that period which elapses between the time when the organism gains access to the surface or tissues and the onset of the symptoms of the disease. In this sense it is probable that the incubation period of most infective diseases is comparatively short. But the term in question has more often than not been employed as indicating the period between the mere exposure of the patient to infection and the onset of the disease. The difference between these two uses of the term is obvious. A person may be exposed to the infection of plague or any other disease, and he may carry away some of the infectious material with him, clinging to his clothes or to some article taken by him from the infected room or district, and days, weeks, or even months may pass before the infectious material gains access to his tissues. It is therefore quite possible that instances that have been regarded as examples of very long periods of incubation are not so in the proper sense of the term. It is only, in fact, at the other end of the scale—in those instances where the incubation period has appeared to be strikingly short—that anything like certainty is possible in attempting to measure its duration.

In regard to plague, there is one class of cases in which the incubation period can be accurately measured. I refer to those cases in which medical men or hospital attendants have been inoculated through wounds or abrasions at necropsies upon plague cadavers. In these cases it is important to remember that the mode of invasion of the virus differs essentially from that which occurs in the enormous majority of plague patients. There is in these cases a definite introduction into a fresh wound of (probably) a considerable quantity of virus which is (probably) accompanied in most instances both by the products of commencing decomposition and by extraneous micro-organisms of a particular class. In the mass of patients, on the other hand, who contract plague in the ordinary manner, the amount of the virus received is (probably) very much smaller, the bacillus gains access to the body either by some old and minute or even invisible abrasion or through the respiratory or alimentary tract, and if it is accompanied by other micro-organisms these are (probably) different from those in the other class of cases. This difference between the two modes of invasion is obvious, and it appears to be associated with a difference in the length of the period of incubation.

In cases of plague contracted through a wound or abrasion becoming infected during a necropsy on a plague cadaver the incubation period is almost invariably two days, rarely three, and perhaps never longer. A considerable number of cases of this nature have now been recorded and almost all agree in the onset of symptoms being upon the second or at latest the third day after the reception of the virus.

The following example came under my own observation in the Parel (Old Government House) Hospital, Bombay. A hospital assistant took part in the performance of a post-mortem examination, on March 14th, 1898, at 3 P.M., on the body of a patient who had died from pneumonic plague 13 hours before. During the examination he pricked one of the fingers of his left hand. He began to feel ill on the evening of March 16th and died on the 20th from acute bubonic plague with a supra-trochlear bubo and later an axillary bubo. Here the incubation period slightly exceeded two days.

Major C. R. M. Green, I.M.S., has recorded the following instances: "A medical officer made a post-mortem examination on a plague case in Madras one hour after death on Oct. 7th. He was assisted by a native who pricked his finger in sewing up the body. The medical officer felt ill on Oct. 9th, was very ill on Oct. 10th, temperature being 103°, and continued so until the night of Oct. 16th when the temperature became normal and he convalesced. The native who pricked his finger absented himself from work on Oct. 10th and died on Oct. 15th. The autopsy showed that he died of plague."[1] Here the incubation period was apparently two days in the case of the (European?) medical officer; and uncertain, but less than three days, in that of the native assistant. The same observer has recorded the following case.[2] A *dome* assisted at the post-mortem examination on a patient who died from plague on June 3rd. He was reported to be very ill on June 8th, and was then said to have been ill for two days. If the necropsy was made on the 3rd the incubation period was apparently in this case of three days' duration. Some doubt, however, exists about this case. The man was at first stated to have cut his finger at the post-mortem examination, but on examining his hands a small nearly healed cut was found on the right thumb and no wound or abrasion on the left upper extremity, while it was on the left side that the (axillary) bubo was present. Mr. J. Nield Cook has recorded a similar case in which a *dome* scratched himself on a point of bone at a necropsy, and plague developed two days later.[3]

Captain S. E. Prall, I.M.S., has published a case in which a native Christian wounded his right index finger on May 19th, and developed plague on the 21st.[4] The original wound, a quarter of an inch in length, healed rapidly and was not to be seen on the 21st. Here the incubation period was of two days' duration.

In the case of Dr. Sticker of the German Plague Commission, who suffered from an attack of plague contracted in this manner, the duration of the incubation period was also stated to have been two days.

It would appear exceedingly probable that in many of these and similar instances the infection has been a mixed one, other organisms and the products of commencing decomposition being received into the tissues in addition to the plague organism, and that this hastens the onset of symptoms.

Two cases, at least, have been recorded which are somewhat analogous to the above in that, though the virus was not received into the patients' tissues at a post-mortem examination, the exact moment at which the virus did enter the patients' tissues could be determined, at all events approximately. The first case of this kind came under my own observation. The patient was one of the English nurses sent to Bombay by the Secretary of State. A patient coughed in the nurse's face on Feb. 15th, 1898, and a portion of the sputum entered the conjunctival sac of one eye. The eye smarted and felt sore until the 18th, when there were feverishness and tenderness below the ear on the side of the affected eye, and the patient died from plague on the 22nd. Here the incubation period was apparently three days. The second case of the kind was recorded in Hong Kong. The patient was, as in the last case, an English nursing sister. The incident which led to her contracting the disease is described as follows. "One of the patients in his delirium coughed in her face on April 20th. She became ill on April 25th and it was soon found that she was suffering from pneumonic plague."[5] In this instance the incubation period was apparently five days. The case is one of great interest when taken in conjunction with the one just described. In that, it will be observed, the infection was, there is every reason to believe, introduced through the conjunctiva. (It is the only instance which I have met with in which the disease was contracted in this manner.) The incubation period was, as already stated, three days. In the second case, on the other hand, the virus was, there is equal reason to believe, inhaled or it entered the tissues by way of the mucous membrane of the mouth or nose or upper respiratory passages, and in this case the incubation period was five days. It is impossible, of course, to form any general conclusion from single instances, but these two cases, as they stand, appear to suggest that when the virus enters the tissues by the conjunctiva the incubation period may be considerably shorter than when it enters by the lung or by the mucous membrane of the nose, mouth, or upper respiratory passages.

The modes of contracting plague hitherto mentioned are, it need scarcely be pointed out, of rare occurrence, and it is of more importance to ascertain the duration of the incubation period in those instances where the disease is contracted in one of the more frequent modes. What those various modes are need not be discussed here. The evidence hitherto published points to the possibility of very great variations in the duration of the incubation period. It will be convenient to take some instances of a short incubation period first, to follow these by some general evidence of the average period of incubation, and to conclude with a brief discussion of some examples where the incubation period has apparently been of remarkable length.

In two recorded instances the incubation period has appeared to be of not more than 24 hours' duration. The first case was that of a woman who, after a prolonged stay in a plague-free village, visited an infected town and sickened with plague on the following day.[6]

Another recent example of a remarkably short incubation period was observed in a village in Mongolia where plague has been endemic for the last nine or ten years. A labourer from this village had been absent for eight days; he returned to his house one afternoon; a person was lying ill suffering from plague in this house. He developed symptoms of plague on the following day within 18 or 20 hours of his return to the house. It is just possible that this man had contracted the infection before leaving the village eight days previously, but the published account of the incident does not state whether he had been exposed to infection before leaving the village, while he certainly was so exposed on his return.[7]

A third example of a short incubation period is recorded in the report of the Bombay Plague Research Committee. The patient was a fireman on board the s.s. *Hydaspes*, which arrived at Bombay from Shanghai (a plague-free port) on Jan. 7th, 1897, and entered dock on the same evening. He did not complain of illness during the voyage to Bombay. Probably on the evening of the 7th, and certainly on the morning of the 8th, he visited the city where plague was prevalent. On the morning of the 9th symptoms of plague developed. Here the incubation period was almost certainly not more than 36 hours. The possibility of the infection having been brought in some unexplained way from one of the plague centres in China to Shanghai, and thence carried by the patient to Bombay, only to develop after his arrival there is so remote that it may be practically ignored.

In most places the average duration of the incubation period of plague has been believed to be from two or three, to five, six, or seven days or even longer. In Bombay, in 1896–97, it was believed to have varied between four and six days, but to have been sometimes shorter and sometimes longer.[8] It is rare in ordinary plague hospital practice in India to be able to determine even approximately the length of the incubation period, for reasons which are too obvious to require explanation; but in one case admitted to the Mody Khana Hospital in Bombay the period could, it was

[1] Indian Medical Gazette, October, 1898.
[2] Ibid., August, 1898.
[3] Ibid.
[4] Ibid., July, 1898.
[5] THE LANCET, June 11th, 1898, p. 1635.
[6] The case is quoted in Simond's paper on the Propagation of Plague in the Annales de l'Institut Pasteur, 1898, p. 625 *et seq.*
[7] La Peste en Mongolie, par M. J. Matignon, Archives de Médecine et de Pharmacie Militaires, June, 1899.
[8] Report of the Bombay Plague Research Committee.

stated, be determined as not exceeding three days. This patient arrived in Bombay from Calcutta (where plague was not then present) by sea, on April 6th, 1897, and he stated that his symptoms developed three days after landing.[9] Dr. T. S. Weir, the health officer of Bombay, has also observed cases in which the incubation period seemed to be less than two days in length.[10]

In Hong-Kong the incubation period was thought to have been usually from three to six days.[11] In the case of three European soldiers who were attacked by the disease in Hong-Kong in 1894 the fever developed respectively three and a half, four, and six and a half days after clearing out some infected houses.[12] In the case of another soldier the incubation period was four days.[13] The proof, however, in these cases does not appear to be absolutely conclusive that the infection was contracted on the particular day in question, and not either before or after. Other observers of the same epidemic estimated the incubation period as varying between four and six days[14] and between two and seven days[15] respectively. In Formosa, in the autumn of 1897, the incubation period was reckoned at from four to five days.[16] In Mauritius the incubation period is stated to have never exceeded five days.[17] In Alexandria the case has been published of a hospital assistant, who is said to have washed the body of a septicæmic plague patient on May 29th, 1899, and to have developed plague five and a half days later.[18] Here, however, further details are required to prove that the infection was contracted from this particular source and not from some other.

The following are some examples where the incubation period has appeared to be unusually prolonged. Surgeon-General R. Harvey, I.M.S., has recorded the cases of two stable-boys in his employ. One was attacked with plague and was at once removed to a separate tent; the other boy (who had slept with this one) and all the remaining servants were kept under observation. The second boy developed plague eight days later.[19]

Leumann has recorded three cases in which, he states, the incubation period was definitely ascertained to be 17, 19, and 20 days respectively. "Each of these cases," he adds, "came under my own observation; was kept aloof from all sources of contagion or infection during the times specified, in a camp where the examining hospital assistant had to reside day and night; could not have been infected by me as I had no occasion to examine any of them until reported to me as suffering from a disease suspiciously like plague, and they undoubtedly developed plague. I have also heard of similar experiences from other medical officers on plague duty in the Bombay Presidency."[20] In these instances, however, the term "incubation period" is clearly employed as covering the period between the time of exposure to infection and the onset of the disease, and not the period between the reception of the bacillus into the tissues and the onset of the disease.

In 1896 a Chinese laundryman died at the Kennedy Town Plague Hospital in Hong-Kong.[21] His only known exposure to infection had been 11 days prior to the commencement of his attack. In this case also, as the man was employed in washing clothes, it is just possible that he may have contracted the disease from some infected clothes and that the incubation period was, therefore, shorter than it appeared. In another instance in the same epidemic "a Chinaman in the gaol at Hong-Kong developed plague after being nine days under lock and key. From June 11th until June 20th he was apparently well, but on the evening of the 20th he became feverish and developed plague. ..... Dr. Lowson, however, states that the man complained of being ill for two days before being placed on the sick-list, thus reducing the period to seven days, and although the man was put in the cells on the 11th it was not until the 12th that he was really beyond contact with the outer world."[22]

A large number of analogous cases of plague developing in prisoners after much more prolonged separation from the outside world have been observed in Bombay. A smart outbreak of plague occurred, it will be remembered, in the Byculla House of Correction late in 1896. In 1898 I had two patients in my wards at Parel who had developed plague in the common gaol in Bombay. One of them had been in prison for six months before the onset of the attack. In a similar case in Karachi the patient had been in prison for five months before he developed plague.[23] In all such cases the most probable explanation is that the infection has been conveyed to the prisoners in some way by means of rats, these animals being known to be common enough in many gaols.

In like manner in the very numerous instances in which plague has developed on board ship or in a distant port at long intervals after the ship has left an infected port, it is impossible to regard them as instances of excessively prolonged incubation period, and their explanation is most probably to be found in the preservation of the plague virus in clothes or other fomites before it gains access to the tissues of the patients.

From the facts and considerations here brought together it may, then, be asserted that when plague is contracted through a wound or abrasion received during a necropsy on a plague cadaver or through the conjunctiva, the incubation period is usually from two or three days and is probably somewhat shorter than when contracted in the more usual manner. When contracted in the ordinary manner the interval between exposure to infection and the onset of symptoms is usually from two to seven days, but it may be as short as 24 hours, and it may be extended in rare cases to a period of several weeks. In the vast mass of cases it is impossible to know at what moment the virus actually enters the tissues of the patient, but it is reasonable to believe[24] that in those cases where the interval between apparent exposure to infection and the onset of symptoms has been very long the virus has for a considerable portion of the period been preserved in fomites outside the body of the patient.

For practical purposes it has been generally agreed to regard the maximum incubation period of plague as 10 or 12 days. The compiler of the Government of India Report upon Plague in India in 1896-97 has recorded the belief "that there has not been a single authenticated instance in the present epidemic of a period of incubation of more than 10 days."[25] 12 days have been accepted as the maximum period by the framers of the Venice Convention. Plague, it is true, has in some instances developed on a vessel, at sea or in port, considerably more than 12 days after leaving an infected port; but these cases have been exceptional. In some of these instances the disease has developed three, four, and even six or more weeks after the ship has left the infected port.[26] It is probable that these cases are to be explained in the manner suggested above; and it is certain that any attempt to extend the conception of the incubation period for quarantine or observation purposes so as to include all possible cases of this kind would be fore-doomed to failure.

[9] General Gatacre's Report, p. 31.

[10] Report of the Municipal Commissioner of Bombay on Plague in Bombay 1896-97, p. 57.

[11] Wilm.

[12] Lowson: Indian Medical Gazette, January, 1897.

[13] Ibid.

[14] Yersin, quoted in the Government of India Report on "Plague in India, 1896, 1897," compiled by R. Nathan, I.C.S., vol. i., p. 19.

[15] Scheube: ibid.

[16] Matignon: Janus, July-August, 1898, "La Peste de l'Ile Formose."

[17] Borel, in the Bulletin de la Société de Médecine Sanitaire Maritime, Marseilles, 1899, No. 4.

[18] Brit. Med. Jour., June 24th, 1899.

[19] Report of the Sanitary Commissioner with the Government of India, 1897.

[20] Indian Medical Gazette, October, 1898.

[21] Transactions of the Epidemiological Society, New Series, vol. xvi., 1896-97, p. 53, "The Spread of Plague," by James Cantlie, M.B. Aberd., F.R.C.S. Eng.

[22] Ibid.

[23] Indian Medical Gazette, August, 1898, p. 307, "Plague in Sind," by Surgeon-Lieutenant-Colonel Henderson, I.M.S.

[24] In view of the occasional occurrence of excessively long incubation periods in a disease such as hydrophobia, a more positive assertion than that contained in the text would scarcely be justifiable.

[25] Government of India Report, vol. i., p. 19.

[26] Two cases of plague occurred on ships in the Thames in the autumn of 1896; in one the patient had left Bombay 39 days before his attack, and in the other the patient had left Calcutta 45 days before developing the disease. A case of plague on the s.s. *Golconda* developed in December, 1898, at least three weeks after the ship had sailed from India. Many other instances of the kind might be quoted, as, for example, the case of the two Indian natives who developed plague in the Transvaal in the year 1898.

BARRY PUBLIC HOSPITAL.—At the meeting of the Barry District Nursing Association held on May 8th, under the presidency of Major-General Lee, J.P., it was stated that the expenditure during the year amounted to £1373 and the income to £1587. 471 cases had been treated during 1899. At the accident hospital 82 cases had been admitted.

ON THE INEFFICIENCY OF THE BOARD OF TRADE TESTS FOR THE DETECTION OF COLOUR-BLINDNESS.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.

WHEN I read a paper over 11 years ago drawing attention to the inefficiency of Holmgren's test for colour-blindness not a single one of the specialists who heard my paper agreed with me; now I do not know of a single man who has specially devoted attention to the subject who would say that this test is an efficient one. But there are many who, though acknowledging that the test is not an efficient one, still adhere blindly to the theory and method. I hope to be able in this paper to show that a test to be efficient must be based upon the facts of colour-blindness and not upon any theory.

It would surprise the public and those in authority if they knew how many colour-blind men there are in the seafaring and railway professions, but I am, of course, absolutely prohibited from giving the name of any colour-blind man who may consult me to his employer without the consent of the man in question. Incredible as it may seem, shipowners are able to and do employ colour-blind officers who have been rejected by the Board of Trade, and who may have been discharged by other companies for nearly causing accidents.

The reports of the Board of Trade show that Holmgren's test has been used by the Marine Department since September, 1894. Let us consider whether there has been any improvement in the results obtained since the adoption of the test. The percentages of failures in colour vision since 1885 are as follows: 1886-86, 1·39; 1886-87, 1·12; 1887-88, 1·01; 1888-89, 1·03; 1889-90, 0·94; 1890-91, 1·19; 1891-92, 0·82; 1892-93, 1·17; from June, 1893, to August, 1894, 1·27; from September, 1894, to December, 1895, 1·39*; and from January to December, 1896, 1·02; from January to December, 1897, 0·67*; and from January to December, 1898, 0·81. The percentage is really less in those years marked with an asterisk, as in each year one of those rejected passed on appeal in the subsequent year. This is in addition to those who passed on appeal in the same year as the examination.

It is not my intention to give in this paper all the objections to Holmgren's test, but only to show that in practice the results have been as I predicted. Anyone who wishes to consider the subject in all its details will find these objections in full in my book on "Colour-Blindness" in the International Scientific Series. I can only say that my nine years' subsequent experience of the subject only makes me more certain of the statements I have there made. One of the chief arguments that was used by the advocates of this test against the old tests of the Board of Trade was that, as the known percentage of colour-blind persons in the community was at least 4, a test that detected a little over 1 per cent. must be inefficient. But it will be seen from the above figures that the percentage of those rejected has not been increased since the alteration in the method of testing. This is all the more worthy of note because candidates are able to be examined for the colour test alone. The percentage for the last two years is very low.

I may mention incidentally, in order to show the unreliability of this test to detect colour-blind persons, that I have examined a man who was so colour-blind that he could not see a red light at all, and yet he passed this test with ease.

Not only does this test fail to detect colour-blind persons but normal-sighted persons are rejected by it, particularly when the examiner adheres very carefully to the directions accompanying the test. It was never suggested that other than colour-blind persons were rejected by the older tests. Those who criticised the tests always declared that they were not stringent enough. It will therefore be seen that the test is more inefficient than that previously used. Of those who were rejected as colour-blind in 1895 21 appealed and eight were found to have been wrongly rejected. I may also mention that another passed at a date later than that of the report. Of those rejected in 1896 12 appealed and five were found to be normal-sighted. In 1897 nine were re-examined on appeal and of these one passed and eight were rejected. The number of officers already in possession of certificates who on coming up for examination in the year 1897 failed to pass the sight test was seven, one mate and one second mate failing in form-vision, while two mates and three second mates failed in colours. The second mate who failed in form-vision passed on re-examination, and one of the three second mates who failed in colour-vision afterwards appealed and passed. Of those rejected in 1898 for colour-blindness six were re-examined on appeal and one passed. It will be noticed that only a small proportion of those rejected appealed.

In order to show how normal-sighted persons are rejected by this test I will relate the following case. A man was sent to me as colour-blind. On examining him I found that he was normal-sighted. I then examined him with Holmgren's test, carefully adhering to Holmgren's directions. He put several confusion colours with the test green but no greens. In answer to my inquiry he said that all were of the same colour. I then said, "Are they all greens?" He replied, "No; they are not. That is a purple-brown, that is a grey, and that is a yellow. You did not tell me to put only greens with the wool you gave me: you said, 'Pick out all of the same shade or colour.'"

The question then comes up for consideration, What are the differences between matching and naming colours? When a person is asked to name a colour without being allowed to compare it with other colours he has to compare the present impression of colour with those impressions already in his mind. In order, therefore, that he may be able to name colours he must at least have an elementary knowledge of colour names. A person who has been educated with regard to colour will be chiefly influenced by colour, but a man who has only an elementary knowledge of colours will be influenced considerably by shade. If we compare the two methods with persons belonging to the educated classes we shall see how inferior the method of matching is to that of naming. Let us take 150 wools and examine two similar colour-blind educated persons with them. The first is asked to classify the wools, putting all those of similar colour together; the second is asked to name the whole of the wools one by one. It will be found that the second person will make very much more numerous mistakes than the first. The reason of this is obvious: in the case of naming colours the person has only the impression present in his mind to enable him to name a colour correctly; in the case of matching colours he has other colours present with which he can compare the test. We all know what to do when we are doubtful what to call a colour—namely, compare it with some other colour about which there is no doubt. Slight differences of colour become more marked on comparison.

It has always seemed to me an anomaly that in testing the colour perception of an individual we should ignore colour names as Holmgren says that we should do. I contend that it is absolutely necessary that the person to be tested should pick out the colours as colours and not as shades. It is not necessary that he should know the names applied to nondescript colours but only the names of the fundamental colours—red, yellow, green, and blue. If we test a person without making him clearly understand that he is to match the wool by its colour and not by any other quality we are very likely to reject normal-sighted persons as colour-blind. A man who names a green light as red must either be colour-blind or dangerously ignorant of colours. I have never met with a case of the latter kind and doubt whether it could be met with in the class of men tested. The Board of Trade have used a test for colour ignorance, but no failure to pass the test has been reported.

One very common mistake which many writers on colour-blindness have made is that colour-blind persons guess the names of colours when naming them. I can say most emphatically that they do nothing of the kind—at least, until they know they are colour-blind. A colour-blind person names colours in accordance with his colour perception and thus shows definitely to which class he belongs. A man who did guess would know that he was incompetent. As a colour-blind person is rarely aware of his defect he answers as he sees. He does not guess because he feels certain that he is right, and therefore in all good faith would run a ship or a train to destruction. It must be remembered that the colour-blind have never seen colours as the normal-sighted see them.

I will now give another example of the effect of ignoring colour names. The following case is recorded in the report

of the Board of Trade. A sailor was examined on June 9th 1894, by the old tests and failed. He made the following errors as to coloured lights. He designated pink as green, green as neutral or blue, and bottle-green as salmon. He was examined again on July 7th, 1894 and he again failed. He called pink green and green neutral. After the introduction of the new tests he appealed and has been specially re-examined and passed! This is the result of the absurd neglect of colour names when examining a person as to his colour-vision. I have no hesitation in saying that this man is colour-blind and was rejected rightly in the first instance by the old tests. Could a normal-sighted person after four and a half years' experience at sea mistake pink for green, green for neutral, or bottle-green for salmon? It will be seen that the man made the ordinary mistakes of the colour-blind and even used such terms as "salmon."

A very simple illustration may help to make my point quite clear. Let it be supposed that I wish a man or a child to separate a roomful of people into men and women. I take him to the room and say, "Now I want you to separate those persons. I want you to put all that look alike in one class and the remainder in the other." When I return I find that he has put all the big people in one class and all the small people in the other. If I then say, "You have classified them wrongly, I wanted you to put the men in one class and the women in the other," he could reply, exactly like the man who was wrongly rejected by Holmgren's test, "Why did you not tell me that you wanted me to separate them into men and women?"

A person with central scotoma will escape detection if examined by this test. For example, I examined a person with central scotoma with my pocket colour-test (in which small pieces of coloured material are ranged in rows) and found him perfectly colour-blind with regard to red, green, and grey. I then examined him with Holmgren's test and he went through it correctly with the greatest ease. As a light at a distance occupies the central portion of the field of vision, these persons will be found to recognise colours when close to them but not when they are at a distance. The red end of the spectrum may be considerably shortened, so much so that a person may scarcely be able to distinguish red from black. It is obvious that this will not prevent him from matching a light-green wool with other green wools.

When I ask a member of the general public whom he thinks are employed as examiners by the Board of Trade he almost always replies, "Trained oculists, of course," and is astonished beyond measure when I tell him that not a single medical man is employed either for conducting the ordinary examination or appeal.

The tests which I use are constructed on the facts of colour-blindness apart from any theory and so will hold good whatever theory be adopted. They are two in number. One I have called the "classification test" and the second the "lantern test." The "classification test" is not essential but is a great help in ascertaining the colour perception of an individual. It consists of four test colours and 180 confusion colours, 150 coloured wools, 10 skeins of silk, 10 small squares of coloured cardboard, and 10 small squares of coloured glass. The whole series of colours is represented, both simple and compound. In addition, there are a large number of colours which have been chosen by colour-blind persons as matching the test colours. The test colours are orange, violet, red, and blue-green, labeled one, two, three, and four respectively. The whole series of colours is chosen with the view of presenting as much difficulty as possible to the colour-blind person and as little as possible to the normal-sighted person.

The apparatus of the lantern test consists of a lantern and 13 slides, seven slides containing coloured glasses and six containing modified glasses. The slides are numbered as follows:—Coloured glasses: (1) standard red (A and B), (2) yellow, (3) pure green, (4) standard green, (5) blue, and (6) purple. Modifying glasses: (7) ground glass, (8) ribbed glass, (9) neutral No. 1, (10) neutral No. 2, (11) neutral No. 3 and (12) neutral No. 4.

Space will not permit me to do much more than refer to these tests which are described in detail in my book on "Colour-Blindness." I will, however, mention the advantages which the lantern test possesses over Holmgren's. On account of the arrangement of signals by sea and land it is necessary that persons employed in the marine and railway services should be able to recognise and distinguish between the standard red, green, and white lights under all conditions in which they are likely to be placed. These conditions are represented by the test. The test demonstrates perfectly to an onlooker the incompetence of those rejected. The test demonstrates to the colour-blind person himself that he is colour-blind. In one combination a red light is shown, visible to the normal-sighted at a considerable distance. With the colour-blind if the red end of the spectrum be much shortened the red light will not be perceived at all. I have only to show a case of this kind to convince the most obtuse disbeliever in colour-blindness. The light is dazzling in its brightness and yet the person examined declares that the room is absolutely dark. Yet this man may have just passed Holmgren's test with ease. A person with central scotoma is at once detected as the light occupies the central point of the field of vision. In another combination the intensity of the lights is altered so as to make them appear changed to the colour-blind whilst leaving them unchanged to the normal-sighted. With the unmodified lights the green is lighter and bluer than the red. When modified with a neutral glass the green appears the darker and yellower of the two, exactly as it does in a mist or fog. The two-unit colour-blind, therefore, at once call this combination red, because the colour is made to look so much like their red. I have not met with a two-unit colour-blind person who has named this combination correctly; the answer has almost invariably been "red," usually with some positive exclamation, as, "There is no doubt about *that* being red." The importance of this fact cannot be over estimated, because I have tested educated colour-blind persons who have found no difficulty in naming the colours when unmodified with the neutral glasses. These would be most dangerous persons at sea because they would deliberately mistake the red light for the green and *vice versâ*. At the same time they would feel positive about the nature of the lights. It seems to me that in all probability this is how many accidents have occurred.

The material of the test is the best possible, as a coloured glass will not fade or become soiled like all dyed substances. Again, a coloured light has none of the accessory qualities which enable the colour-blind person to pass through other tests. Thus many two-unit colour-blind persons will call the yellow glass red or green who would not think of putting a yellow with a green or red wool on account of the difference in luminosity. The method is better than that of direct comparison because the candidate is forced to use his colour perception and has to compare the colour seen with previous impressions of colour in his mind. By the use of neutral glasses I have obviated the objection to the method of naming colours (namely, that an individual can distinguish between colours by their intensity) and forced the examinee to depend upon his colour perception and not upon some other accessory quality of the object seen. No amount of coaching will enable a colour-blind person to pass this test, whilst almost any other may be passed in this way. The test also has a quality possessed by no other—namely, that of enabling the examiner to reject dangerous persons and dangerous persons only.

It is incredible that the subject of colour-blindness and defects of sight in seamen and railwaymen should be so much neglected by those in authority, as it ought to be evident to every thinking man that anyone who cannot distinguish red from green or who cannot see red at all is not a proper person to be employed in occupations in which it is necessary to distinguish between these colours. I know of no case in which, an accident having occurred through a sailor or engine-driver mistaking the signals, the man's sight has been examined at the subsequent inquiry to see whether he was colour-blind or his sight defective in any way. In accidents which have seemed to me to have occurred through colour-blindness, others as well as myself have written to the authorities asking, but ineffectually, that the men's sight should be examined. At the same time the men examined have a right to expect an efficient test conducted by a properly qualified medical man. We ought not to hear of so many cases of normal-sighted persons being rejected as colour-blind. Let those in authority put themselves in the places of the unfortunate officers who have been wrongly rejected.

As I propose shortly to give several demonstrations of colour-blindness I should be glad if anyone who would like to be present would communicate with me. I should be glad to test then any doubtful case of colour-blindness, especially one which has escaped detection by any of the tests in ordinary use

Harley-street, W. EDRIDGE-GREEN.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

SIMULTANEOUS EXCISION OF BOTH MAMMÆ FOR CANCER.

BY G. P. NEWBOLT, F.R.C.S. ENG.,
HONARY SURGEON TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

IN THE LANCET of May 12th, p. 1356, Dr. Herbert Snow published a note on a case of double excision of the mammæ with axillary glands for cancer done simultaneously. As I have recently operated simultaneously upon a case of cancer of both breasts it may be of interest to report the case.

The patient, aged 64 years, consulted me on April 4th, 1900, concerning a lump in her left breast. She was a fairly healthy-looking woman and had married twice. She had borne no children and had been a widow for seven years. She had worked hard with the left arm and had noticed a lump in the left breast for about 12 months and it was now becoming painful. On examination there was a lump of the size of a small orange in the left breast and a sanious discharge coming from the left nipple which had retracted. The right breast, about which she did not complain, was hard and infiltrated, but the nipple was not retracted. I could not feel any glands in either axilla though she was a spare woman. She had a mitral murmur and a trace of albumin in her urine. On April 6th I removed both breasts, opening the left axilla as I excised the left breast first, but as I found no glands I left the right axilla untouched. The patient suffered somewhat from shock but rallied well and was about at the end of three weeks, the wounds having healed. Microscopically the left growth was a duct carcinoma, that of the right side a glandular carcinoma. If, therefore, I had opened the right axilla I probably should have found some glands, but a naked-eye section of the growth at the time of operation was inconclusive.

Remarks.—A case of this nature offers several points for consideration and I think it will generally be acknowledged that removal of both breasts and axillary glands simultaneously in a woman, aged 64 years, with albuminuria is a severe procedure. The question arises, Would it not be better to remove one breast and clear out one axilla at a time? To this the objection can be raised that in the meanwhile the growth on the opposite side increases and there is also the chance that the patient will not face the second operation, especially if, as in this case, she does not think much of the growth which she has not noticed but which has been pointed out to her. As Dr. Snow remarks, the cases must be few in which operation is justifiable. It is interesting to note that one growth was a duct and the other was a glandular carcinoma. I intend, if possible, to keep my patient under observation and to clear out the right axilla on the first indication.

Liverpool.

A CASE OF MULTIPLE PAPILLOMA OF THE VAGINAL SURFACE OF THE CERVIX UTERI.

BY JAMES OLIVER, M.D., F.R.S. EDIN.,
PHYSICIAN TO THE HOSPITAL FOR WOMEN, SOHO-SQUARE, W.

PAPILLOMA of the vaginal surface of the cervix uteri is an extremely rare disease. A patient suffering from this affection who came under my care was 41 years of age. She had had two children and had been a widow for ten years. She consulted me on account of a slight hæmorrhagic discharge from the vagina which she had noticed occasionally for five months. At no time had any alteration in the frequency or amount of the menstrual discharge been noted, and during the inter-menstrual period preceding her visit to me there had been no hæmorrhage but merely a profuse white discharge from the vagina. A digital examination of the vagina detected a shaggy polypoid growth of the size of a small hazel-nut springing from the vaginal surface of the left half of the cervix about three-eighths of an inch from the os uteri. There was no evidence of any infiltration of the cervical tissue either in the neighbourhood of the growth or around the os. The examination caused the tumour to bleed freely.

After snipping off this growth with scissors two smaller growths of the same character of about the size of millet seeds, which had been concealed by the main growth, were revealed. Each growth possessed a small arterial vessel which spurted bright blood immediately its continuity was severed. The site of each growth presented the appearance of a highly vascular spot from which the mucous membrane might have been removed by a circular punch of the size of a small goose-quill. These islets were separated from each other by apparently healthy mucous membrane and there was no evidence of induration of the cervical tissues. To include the bases of all three growths I removed a wedge-shaped piece of tissue from the left half of the cervix and brought the wound together with deep catgut sutures, creating thereby a linear wound one and a quarter inches in length. The operation did not interfere in any way with the integrity of the os uteri or the cervical canal. Union was effected by first intention. (*Note.*—If my patient had been living a marital life vaginal hæmorrhage would have been observed more frequently and would probably have been more profuse.)

Microscopic sections of the growths presented generally the appearances of a simple papilloma, but sections of the base of the largest growth revealed the presence of a few cells of such a character as to arouse suspicion regarding the innocency of the tumours.

Gordon-square, W.C.

PLAGUE CONTRACTED FROM THE BITE OF A RAT.

BY J. BELL, L.R.C.P. LOND., M.R.C.S. ENG.,
MEDICAL OFFICER IN CHARGE OF POST-MORTEMS AT THE GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

THE following case of plague resulting from the bite of a rat may be of interest.

On April 12th, amongst the bodies lying at the public mortuary at Hong-Kong was that of an adult Chinaman, in the Government employ as a turncock, who resided at No. 3 Police Station, in the centre of the area where most of the cases of plague are at present occurring. The police report stated: "His daughter reports that her father was bitten by a rat on the thumb and that he treated the wound himself." On the ball of the left thumb were two small wounds and the hand and forearm were much swollen. In the left axilla was a brawny œdematous swelling, in the midst of which was an enlarged gland with hæmorrhages in the centre. From this a smear was taken on a slide and after staining with carbolised fuchsin it showed typical plague bacilli. Through the kindness of Inspector Ford I ascertained from the man's wife that about ten days ago, in one of the streets in the neighbourhood of the police-station, he was opening an iron door guarding the street water tap and in this space there was a rat. In trying to catch it he received the bite, and three days afterwards he noticed the arm getting painful and tender.

Government Civil Hospital, Hong-Kong.

CARDIFF INFIRMARY.—The annual report for 1899 which has just been issued shows that during the year 1700 in-patients had been admitted against 1521 in 1898, the number of patients daily in the institution being 133 as against 124 in the previous year. The average cost per bed occupied was £54 4*s*., an increase of £2 7*s*. as compared with the previous year. The out-patients numbered 13,556, an increase of 513 over 1898. The prescriptions dispensed for these cases were 25,010 against 27,323 in the previous year. The Infirmary Saturday collection showed an increase of £277 over 1899. The "Sunbeam League" contributions amounted to £315, sufficient to maintain six cots in the Children's Ward. During the year Mr. Bell contributed £1500 in memory of his late uncle, Mr. Nixon. Legacies of £1000 and £100 had been received from the late Mr. J. Davies and Mr. C. Morris respectively, and Mr. T. Webb had given £1500 for the purpose of erecting a new operation theatre as a memorial to his late wife.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LIVERPOOL STANLEY HOSPITAL.

A CASE OF RETRO-PERITONEAL FIBRO-CYSTIC TUMOUR; DEATH FROM PULMONARY EMBOLISM TEN DAYS AFTER OPERATION.

(Under the care of Mr. D. DOUGLAS-CRAWFORD.)

ALL forms of retro-peritoneal growths are far from common. The tissue in which they arise is the loose fibro-fatty layer which is immediately beneath the peritoneum and is called the sub-peritoneal fat, and therefore these tumours would more accurately be named sub-peritoneal. As the layer is composed of fat and fibrous tissue, the new growths which most commonly occur are lipomata and fibromata; myxomata also and sarcomata are found. Cystic tumours may arise in this situation in connexion with remains of the Wolffian body or Müller's duct, or by cystic degeneration of new growths; occasionally a chylous cyst is found.[1]

A virgin, aged 34 years, was placed under the care of Mr. Douglas-Crawford in July, 1899, having been sent to him by Mr. C. Jordison of Malpas. The patient had noticed a lump in the abdomen for four years, and it was on account of its gradual increase of size that she sought medical advice a few days previously to her admission to hospital. Menstruation had always been quite regular.

On examination a large elastic tumour was seen occupying the hypogastric and umbilical regions and extending somewhat into the left hypochondrium. The percussion note was dull over the lower part of the tumour but was resonant above and to the left. A distinct percussion thrill could be elicited. Per vaginam the uterus was found to be tilted well forwards and downwards and of normal length. The right ovary could be definitely palpated. There was, however, considerable doubt about the left. The tumour appeared to be filling the pelvis behind the uterus, pushing that organ in front of it. The opinions expressed were in favour of a fibro-cystic tumour springing either from the left ovary or from within the broad ligament.

The patient having been prepared in the usual manner an operation was undertaken on July 22nd. A small mesial incision was made through the abdominal wall below the umbilicus and at once a thick-walled cyst presented. This was tapped and a large quantity of clear fluid was drawn off. Owing to the incision being too small to enable the fingers to be swept around the tumour it was enlarged upwards three inches beyond the umbilicus. On bringing the upper end of the tumour into the wound it was found to be covered by small intestine. The emptying of the large cyst allowed the pelvis to be explored and it was found that both ovaries and tubes were apparently normal. It was evident that the growth was a retro-peritoneal tumour, whether primarily abdominal or springing originally from the intra-ligamentous tissue, and which later had become separated, it was difficult to say. A longitudinal incision was made through the peritoneum over the tumour and its enucleation was proceeded with, this being a difficult and tedious process owing to the intimate connexion between the tumour and the peritoneum. In order still further to reduce its size one or two small cysts were tapped and a thick mucoid fluid was drawn off. On reaching the base of the tumour a number of large veins were seen passing between it and the right common iliac vein, and here the surface was studded with nodules which looked like small fibromata. The attachment of the base of the tumour extended from the left side of the lumbar vertebræ downwards over the aorta and vena cava the sacral surface lying between the common iliac arteries, and so adherent was it to the large veins (vena cava and iliacs) that separation was impossible, consequently the bulk of the tumour was cut away and the remaining portion was clamped, and the edges, together with the peritoneal layers, were sutured to the edges of the recti, a glass drainage-tube was placed in the lower end of the wound, and the patient, much collapsed (after an operation lasting over an hour), was sent back to bed.

During the two days following the operation the patient's condition was decidedly critical, but after that she rallied and for the next eight days progressed splendidly. The

Section of tumour showing muscle cells. One division on the scale corresponds to 10 μ.

wound and stump kept sweet and were dressed daily with iodoform and cyanide gauze. On August 1st, at 5 A.M., the house surgeon (Dr. R. G. Henderson) was called to see the patient and found her left leg much swollen, but she complained of no pain and her pulse was good. When Mr. Douglas-Crawford saw her at noon her pulse was becoming rapid and shortly afterwards she showed signs of respiratory difficulty and died about one o'clock.

Necropsy.—On post-mortem examination it was found that the wound was healthy and that the peritoneal adhesions were good. The remains of the tumour were with great difficulty enucleated, and from a narrow area extending from the left second lumbar vertebra to the fourth it was only possible after cutting through the superficial layers of the anterior common vertebral ligament. At the commencement of the vena cava a clot was found extending into the left common iliac vein but not at all into the right vein. The other abdominal organs were healthy. The uterus, broad ligaments, ovaries, and tubes were quite normal. The right ventricle was filled with clot extending into both divisions of the pulmonary artery, and one or two small clots were found in the lungs. The section of the tumour kindly photographed by Mr. H. A. Clarke shows it to be a fibro-myoma which had evidently undergone cystic degeneration.

Remarks by Mr. DOUGLAS-CRAWFORD.—The literature of tumours growing from the retro-peritoneal tissue is extremely scanty. In an exhaustive paper on the subject read by Mr. William Anderson before the British Medical Association at Carlisle in 1896 he mentions lipoma, fibro-myoma, and sarcoma as the tumours likely to be met with in this region and of these the lipoma appears to be the commonest. He considers the fibro-myoma to be much rarer and refers to two cases—one in which a series of 21 fibro-myomata was removed from a girl, nine years of age, by Professor Saneyoshi at the Tokio Charity Hospital. This patient died from shock half an hour after the operation;

[1] Sarwey: Centralblatt für Gynäkologie, 1898, No. 16.

and another case in which Péan removed one weighing 18 pounds from the root of the mesentery. In discussing the etiology of these fibro-myomata Mr. Anderson points out the existence of unstriped muscular tissue in different parts of the retro-peritoneal tissue, especially between the layers of the broad ligaments and in the suspensory fibres of the mesentery. Amongst the more recent literature is an interesting paper by Mr. Marmaduke Sheild read before the Royal Medical and Chirurgical Society[1] in which he gives an excellent description of a large fibro-myoma which was successfully removed from the retro-peritoneal space. My own case appears to resemble Mr. Sheild's except that it had undergone cystic degeneration and I am inclined to think that it arose from the muscular tissue found at the root of the mesentery.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Wounded in the Present War.

A MEETING of this society was held on May 22nd, Dr. F. W. PAVY, the President, being in the chair.

Mr. CLINTON T. DENT gave an address on the Wounded in the Present War. He commenced by referring to the large scope of the surgical field which had been afforded by the present war; he would, however, confine his remarks to certain questions relating to the accommodation and to one or two classes of gunshot wounds. He much preferred tent hospitals to huts. The patients in them certainly did better. The only objection was in case of wet weather, but this objection was more apparent than real. The tents were more sanitary and the ventilation was more perfect. No. 4 Hospital on the Mooi river was, on the whole, the most satisfactory institution he saw in the whole campaign. It was about 4000 feet above the sea-level and had 500 and afterwards 800 beds. Churches, schools, and public buildings were generally ill-adapted for surgical cases, though they appeared charming to the casual visitor. Of the latter there were too many and their absence would have been an advantage. The additional air-space in a marquee was very desirable. There should be always some kind of flooring. The regulation pattern of bed was too wide. The operating theatres should be of a more permanent kind than a tent. In this campaign the climate, altitude, and environment were all very favourable to the medical department, quite as much as the small-bore and high velocity arms. The question of the extraction of bullets had assumed quite a different aspect in modern times. When retained a bullet had very often struck a bone, but it nevertheless went a straight course. The rapidity of rotation was enormous and that was one of the reasons why it had an expanding effect on bone. A fair proportion of bullets were lodged. When retained a bullet might after a time become a source of irritation, physical or psychical. If the bullet were sterile it did but little harm by being retained, but if septic it made itself known in that way. One of the most remarkable cases he had met with was that of a man who was shot through the frontal bone from side to side, the bullet lodging in the helmet on the other side. Under certain circumstances a bullet should be removed—viz., (1) when it was subcutaneous; (2) when it was pressing on nerves or important or vital structures; (3) when it was much deformed, especially if the mantle was split; (4) when it was likely to interfere with the union of a bone which it had split; and (5) generally shrapnel bullets should be removed. On the other hand, a bullet might very well be left unremoved when in the abdominal or thoracic cavity, or when lodged deep in cancellous tissue of bone or deep in muscular tissue, or, again, when the division of important muscular tissue was necessary for its removal. He had never advocated that all bullets should be left. The effect of range was very uncertain. Less injury would be done in a living than in a dead body. In the dead body subcutaneous bullets were rare, but in the living body they were not at all uncommon. The nearest escape he had seen was the case of an officer who was struck by a bullet precisely in the centre of the sternum which it perforated excepting the inner table. Long bones were rarely drilled but often fissured and splintered. The bone became slightly expanded and it might remain expanded. A feature of small-bore wounds was the large amount of callus afterwards thrown out, and therefore a neighbouring joint might become fixed. As to the effect of transport on fractures he (Mr. Dent) could fully indorse Mr. Treves's remarks. He thought that injuries to nerves were more common with high velocity bullets. The nerve might be engaged in the callus. He had seen three cases where Mauser bullets had gone clean through a nerve trunk. The function of the nerve might be disturbed when the bullet went quite close to the nerve trunk without actually cutting it. Nerves might be involved in cicatrices and he mentioned cases in illustration. Head injuries were some of the most successful surgical cases he had met with. "Gutter fractures" of the skull should always be trephined; the injury of the diploë in such cases was often very great. That old dictum of Guthrie that injuries of equal extent were more serious in the frontal than in the mid-cerebral region, and in the latter than in the post-cerebral region, was certainly not borne out by the experience of the present war. Mr. Dent exhibited lantern slides of skiagrams and of Mooi river hospital and Boer trenches.

Sir WILLIAM MACCORMAC also gave an address on the Wounded in the Present War, which appears in full at p. 1485 of the present issue of THE LANCET. He exhibited a 100-pound shell which had been presented to him by Colonel Downing and the officers of the Royal Artillery. It was fired from the Boer Long Tom gun, "Umbulwano Bill," and 20 of such shells were fired into Ladysmith during the siege daily excepting Sundays. This gun was mounted on a disappearing carriage and it was capable of carrying 10,000 yards (six miles). Another smaller shell, the first fired by the Boers into the English lines at the battle of Colenso, was also shown.

Major WILLIAM DICK, R.A.M.C. (Netley), had only had experience of wounds after the men came back from the seat of war. There had been a large number of cases of paralysis of the musculo-spiral nerve. In one case he thought the nerve was divided, but he found at the operation that it was intact. It was only damaged, and the patient completely recovered. He believed small-bore bullets were more often deflected than was supposed, and he mentioned cases in point. He also mentioned several cases of abdominal wounds, and he believed that their successful issue had been favoured by the fact of the patients having been wounded when starving.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Exhibition of Cases and Specimens.

AN ordinary meeting of this society was held on May 7th, Sir WILLIAM DALBY, the President, being in the chair.

The PRESIDENT announced that Professor Politzer of Vienna had been elected an honorary member by the council.

Mr. C. A. BALLANCE showed a case of Epithelial Grafting of the Labyrinth after Removal of the Semicircular Canals. A woman, aged 54 years, had had a discharge from the left ear since childhood. On May 7th, 1898, she was admitted into St. Thomas's Hospital with a large masto-squamous abscess, foul otorrhœa, and extreme vertigo. The old mastoid operation was performed, but discharge from the ear and vertigo still persisted and deafness was absolute. On Feb. 6th, 1900, Mr. Ballance found a sinus leading into the petrous portion. The semicircular canals were in part removed, and the vestibule was opened, the remaining cavity being repeatedly swabbed out with absolute phenol. For several days the patient was very sick and giddy. On the 17th the cavity was grafted. No giddiness or sickness occurred after the grafting. On removing the plug on the 22nd the patient at once said that she could hear well. When shown at the meeting the wound was soundly healed, the hearing being good, and the patient could run, being free from giddiness and also from tinnitus. Mr. Ballance pointed out that the

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxxx.

case illustrated the boundless possibilities of epithelial grafting when applied to the labyrinth for the cure of deafness.—The PRESIDENT thought that Mr. Ballance's procedure opened up an enormous field for the future.—Dr. WILLIAM MILLIGAN thought that the procedure could be adapted to all cases of dry catarrh of the middle-ear, and for certain cases of post-suppurative fixation of the stapes; he had accordingly operated on three cases of advanced dry catarrh in which long previous treatment had been tried. He first performed the complete post-aural operation and then endeavoured to remove the stapes, or if the foot-plate was too ankylosed for removal he burred through it and the adjacent part of the promontory, thus exposing the vestibule and providing a path for the direct transmission of sonorous vibration to the internal ear. The final measure consisted in grafting, as in Mr. Ballance's suppurative cases. In one case the hearing had been somewhat improved. The marked tinnitus had been to a great extent relieved.—Mr. HUGH JONES had performed Malherbe's operation in one case, but the result was disappointing.—Mr. ARTHUR CHEATLE thought that opening the posterior labyrinth would be of use in all cases of increased tension as indicated by giddiness and tinnitus. In cases of dry catarrh of the middle-ear he suggested that the promontory should be opened through the meatus.—Mr. ERNEST WAGGETT thought that in all cases of increased labyrinthine tension the scalæ should be tapped through the round window before attempting Mr. Ballance's operation.—Dr. URBAN PRITCHARD, Mr. CUMBERBATCH, Dr. DUNDAS GRANT, Dr. MACNAUGHTON JONES, and Mr. C. H. FAGGE joined in the discussion.

Mr. BALLANCE also showed a case in which an Alveolar Sarcoma had involved the Petrous Bone, paralysing the seventh, eighth, ninth, tenth, eleventh, and twelfth nerves and on which he had operated with success. A woman, aged 32 years, was admitted into the National Hospital, Queen-square, on Feb. 7th, with left facial paralysis, severe pain in the left ear, and difficulty in swallowing. A polypus filled the meatus and there was some foul discharge from the ear. The left side of the tongue was wasted and it was protruded to the left. Taste was absent on the same side. The voice was nasal, the left side of the soft palate was paralysed, and fluids regurgitated through the nose. The left side of the pharynx was insensitive. The left vocal cord was fixed in the cadaveric position. Complete paralysis of the trapezius and sterno-mastoid muscles with atrophy was also present. On March 9th on opening the bone behind the ear a tumour was found which had destroyed the mastoid and petrous portions. Rapid enucleation of the tumour was performed, very considerable hæmorrhage resulting. The growth was adherent to the dura mater in the region corresponding to the anterior and posterior surfaces of the petrous portion. On May 7th sound healing had occurred.

Mr. ARTHUR CHEATLE showed (1) a case of Epithelioma of the Meatus which had involved the Middle-ear and the Parotid Region; and (2) a case of Chronic Middle-ear Suppuration with loss of the Head of the Malleus, the Incus, and the Crura of the Stapes.

Mr. C. H. FAGGE showed (1) a case in which Healing had occurred after Ossiculectomy (discharge had been present for 18 years); and (2) a case of Functional Nerve Deafness.

Dr. DUNDAS GRANT showed a case of Old-standing Perforation healed by the Application of Trichloracetic Acid.

Dr. MACNAUGHTON JONES showed a case of Contracted Meatus arising out of Chronic Otitis Media.

Dr. JOBSON HORNE exhibited the specimens and read the notes of a case of Septic Thrombosis of the Right Lateral and the Superior Longitudinal Sinuses occurring with broncho-pneumonia, associated with pus in the middle-ears, the membranes being intact. The diplococcus of pneumonia and pyogenic organisms were cultivated from the clot in the sinuses and from the middle ear. It was suggested that the infection of the sinuses had occurred by way of the petro-squamosal sinus (which was very marked) from the middle-ear.—Mr. ARTHUR CHEATLE in discussing the case alluded to Dr. Still's investigations on the presence of infective pus in the intact middle-ear of infants. He thought that if pathological changes in the lining membrane were present the condition could not be considered normal, and he showed a drawing and specimen of an illustrative case.—Mr. BALLANCE stated that the middle-ear of every child under five years of age contained muco-pus, but he was not prepared to say that the presence of an infective organism was normal.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—New Handle for Axis-traction Forceps.—Vaporisation of the Endometrium.—Vulvar Hæmatoma in Labour.

A MEETING of this society was held on May 9th, Dr. R. MILNE MURRAY, the President, being in the chair.

Professor A. R. SIMPSON showed (1) an Anencephalic Fœtus and (2) a Bi-partite Placenta with a Single Amnion and a Single Child.

Dr. J. LAMOND LACKIE showed the Bladder and Kidneys from a case of Suppression of Urine in which there had been evidence of tuberculous kidney for nine years.

Dr. G. MATHESON CULLEN showed (1) the Cervix and Part of the Vagina which had been thrown off after separation in a syphilitic patient, the cause not being known; and (2) Radiograms of Polydactyly. Out of a family of 13 children three had deformed thumbs and the mother had also double thumbs on both hands.

Dr. R. MILNE MURRAY showed a Cyclops Fœtus which lived a few hours.

Dr. J. FOULIS showed a New Handle for Axis-traction Forceps.

Professor A. R. SIMPSON read a paper on Vaporisation of the Endometrium. In 1895 Dr. Neugebauer of Warsaw gave a preliminary notice of a paper by Professor Sneguiveff of Moscow, who had for some years previously been making observations on the effect of steam as a hæmostatic. It had proved serviceable in various hæmorrhages and when applied to the endometrium acted as a caustic, hæmostatic, anæsthetic, and antiseptic. The apparatus consisted of a small boiler for generating steam and a double catheter for conveying the steam in and out of the uterine cavity. Dr. Ludwig Pincus of Danzig had tested the applicability of this apparatus to a variety of cases and had studied the conditions under which it might be employed. The operation with the fenestrated catheter, where steam came directly into contact with the endometrium, he termed "atmokausis." Another operation with a non-fenestrated catheter, the steam not being allowed to escape, he termed "zostokausis." Pincus gave the following conclusions regarding the method of treatment:—1. Atmokausis and zestokausis were both effective and serviceable therapeutic methods; they were not more dangerous than other intra-uterine procedures if the rules were carefully followed. 2. The technique might be regarded as settled. 3. The best results were obtained when it was applied apart from curetting, without narcosis, and with previous dilatation and protection of the cervix. The patient should rest in bed till the slough separated, in slight cases till the third or the fourth day. 4. A dosage of the cauterisation from a superficial influence to the most complete destruction of the mucous membrane was absolutely possible. The dosage depended on the temperature of the steam (which was regulated by a thermometer attached to the boiler) and the consistence of the uterus. The higher temperatures from 110° to 115° C. were to be preferred. The shortest possible duration with the highest temperature was best, especially till experience was gained in its use. 5. Both procedures might replace or supplement curettage, and they were indispensable when the curette failed. 6. The method acted as a specific against uterine hæmorrhages from whatever cause, and it gave good and rapid results in all forms of endometritis, metritis, and sub-involution. 7. Obliteration or atrophy of the uterus could be obtained to take the place of extirpation by applying it for a longer period. 8. When atmokausis fails or produces only a transitory effect the contractile elements of the uterus have been quite lost. 9. It was the best palliative in inoperable intra uterine cancer. 10. It produced excellent results in the early stage of sepsis following abortion or labour. It could also be used for preliminary disinfection of the uterus before total extirpation and abdominal operations. 11. Submucous myomata and malignant neoplasms must be excluded from the treatment. 12. It was absolutely necessary that the adnexa should be quite free from disease. Professor Simpson had, he said, employed this vaporisation in 14 cases; the application was continued in some cases for 45 seconds, in others for 60 seconds, and in one for 90 seconds. All of the patients in these cases were under chloroform at the time, but only one patient complained of any suffering after it. The cases were all those of endometritis with menorrhagia or metrorrhagia. Out of 14 cases 11 were cured and the rest improved. Against atmokausis was

the possible production of a stenosis or atresia of the cervix, and to prevent this the catheter could, as Duhrssen suggested, be covered with a piece of indiarubber tubing. The germicidal power claimed for the operation must be doubted, if not discarded, in view of the experiments of Flatau who found it took a minute before the temperature rose from 75° to 80° C., and that the available heat after 60 seconds was only from 75° to 85° C. The best results were obtained where the anterior walls were firm with good power of muscular contraction. The only disastrous accident recorded occurred in a case of soft-walled uterus where the fundus was perforated by means of the zestocauter. Pincus advised that the operation should be performed without chloroform, as when the steam has produced too deep effects on the mucosa painful contractions occur in the muscular wall. He applied it in ambulants, but advised rest in bed for three or four days after its application. Professor Simpson had had no untoward effects even though in some of the cases there were traces of old-standing salpingo-ovaritis. Professor Sneguiveff had also employed steam for the arrest of hæmorrhage in surgical practice—as from the surface of the liver—with satisfactory results. Bleeding wounds treated in this way healed by first intention. His instrument case was provided with a tube for the application of steam for this purpose.

Dr. J. W. BALLANTYNE contributed Clinical Notes on a case of Vulvar Hæmatoma in Labour. On being called to the patient he found that in about 50 minutes the vulvar swelling had attained the size of a fœtal head. The patient was a primipara, aged 20 years. Her pregnancy had progressed normally and there was no pendulous abdomen, and no varicose veins in the labia had been noticed by the student in charge. The first stage of labour had passed satisfactorily, but with the onset of the second the patient began to complain of sharp pain in the left side of the genitals and the vulvar swelling speedily formed. It was very tense, the skin appearing as if it would burst, and no pulsation was felt in it though there was an obscure sense of fluctuation. The fœtal head was at the pelvic inlet and in the left occipito-anterior position, well flexed, and no contraction of the brim could be detected. Forceps were with difficulty applied and the head was brought down to the perineum. As the head was distending and passing over the perineum the vulvar tumour bulged into the fenestra of one of the blades and ruptured with an almost clean-cut tear. A huge mass of blood-clot was expelled along with some fluid blood and serum. The child was quickly delivered and was not abnormally large nor was the head preternaturally well ossified. After the expulsion of the clot from the left labium, some swelling still remained due to infiltration of its tissues with blood. Bleeding soon ceased, and after careful washing with antiseptic solution the edges of the wound were brought together by four or five sutures. Owing to the thickened condition of the labium the centre of the wound could not be closed and it was packed with iodoform gauze. The wound healed well and the labium returned to its normal size. In the treatment of this condition forceps were applied, as it was hoped to deliver the child without rupturing the swelling, but it would have been better to have incised the hæmatoma before the application of the forceps, as the cut could then have been made at a point of election and with more prospect of a better union. The etiology of the hæmatoma was obscure. Traumatism, twin-labour, large fœtus, excessive ossification of the fœtal head, and unusual varicosity of the labial veins were absent in this case. There was a small amount of albumin in the urine which disappeared in a few days after labour. This may have been a predisposing cause. Ferret in examining a specimen of this condition found a sliding or displacement of the layers of tissues in the pelvis, and that hæmorrhage had occurred into the space thus produced.

An adjourned discussion took place on Dr. F. W. M. HAULTAIN'S paper on Pathological Amenorrhœa from other than Constitutional Causes read at the previous meeting.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Ovarian Tumour without Uterine Attachment.—Sarcoma of Both Ovaries.—Porro's Operation.

A MEETING of this section was held on April 20th, Dr. A. V. MACAN, the President, being in the chair.

Dr. FLYNN exhibited a specimen of Ovarian Tumour without any Uterine Attachment at the time of operation.—Dr. W. J. SMYLY said that he had an opportunity of seeing the case. It was one of the most interesting he had seen for a long time because of the impossibility of making a diagnosis. What struck him as most peculiar was that the tumour was in the upper part of the abdomen and there was a clear, resonant space immediately over the pubes. He agreed with Dr. Flynn's view as to the cause of the condition—viz., that the tumour was pushed up into the left hypochondrium and formed adhesions there, and as the uterus afterwards descended into the pelvis there was a drag on the pedicle causing atrophy and complete separation from the tumour. There could hardly have been twisting of the pedicle because it would have given rise to violent symptoms.

Dr. KIDD read short notes on a case of Round-Celled Sarcoma of both Ovaries, illustrated by specimens. After reviewing the literature of the subject he drew attention to the extreme rarity of these tumours, having failed to find any account of a similar tumour being brought before that section, and also failing to find any authentic record amongst the Proceedings of the older Obstetrical Society or amongst the Transactions of the old Pathological Society. The patient was 39 years of age and was much wasted, the wasting extending over 12 months she said, although she only noticed the enlargement of the abdomen. When the left ovary was being removed there was quite alarming hæmorrhage from the pedicle owing to its being cut through by the ligature. The tissues were infiltrated with disease, although there was no naked-eye extension to the uterus. Finally, after great difficulty, the pedicle was secured. The difficulty of dealing with the right ovary was not so great. The peritoneum and pelvic glands were found to be infiltrated with the disease. The abdominal wall through which the incision was made was not a quarter of an inch thick, and no sign of muscle could be detected owing to emaciation and probably separation of the recti. She recovered well enough to be able to sit up for a day or two, but gradually sank from extension of the disease in the abdominal cavity and in a large gland at the base of the neck on the left side. The ovaries were of the following dimensions: Left ovary: length, 8 inches; breadth, 4½ inches; and thickness, 3¼ inches. Right ovary: length, 7¼ inches; breadth, 3¼ inches.; and thickness, 3 inches.—Dr. SMYLY, Dr. COLE-BAKER, and the PRESIDENT discussed the case.

Dr. COLE-BAKER read a paper on Porro's Operation (extra-peritoneal) for Ruptured Uterus complicated by Myoma and five and a half months Pregnancy. He first saw the patient on August 6th, 1899. Her age was 38 years. She had been married two years. She had had an abortion (about the third month) in February, 1898. She was then pregnant (for the second time) from five and a half to six months. She had been taken ill with vomiting and (?) "cramps" four days previously. Her pulse and temperature were normal. Dr. Cole-Baker found the "fundus" reaching to the umbilicus and labour pains existing, and per vaginam he found the true pelvis tightly filled with a tense elastic tumour. At first no cervix or external os could be felt, but on more careful examination the latter (the posterior lip only of which could be reached with much difficulty) was discovered about two inches above the upper border of the symphysis pubis. He came to the conclusion that he had to deal with a case of retroverted and "incarcerated" gravid uterus (posterior sacculation), with labour pains present, and that prompt action was necessary or rupture of the uterus must ensue sooner or later. The patient was then admitted to the Coombe Lying-in Hospital. Under anæsthesia palpation now gave the impression that the tumour was a uterus bicornis, the right cornu being somewhat the larger and harder of the two. On August 10th Dr. Cole-Baker came to the conclusion that the so-called right cornu was a myoma which had become damaged in the pelvis or during its replacement and that the extreme tenderness was due to localised peritonitis. Dr. W. J. Smyly concurred in this opinion. Her temperature, when he saw her, was 103·4° F. and her pulse was 108. The pain was much increased. On the evening of August 11th, without any warning or labour pains, the patient was delivered of a male fœtus, aged about five and a half months, with the membranes intact. There was no hæmorrhage. On August 13th she looked thoroughly septic. Her temperature at 9 A.M. was 100·8°, and her pulse was 104. She was drowsy and dull, but when roused said she "felt splendid and had no pain at all." There was scarcely any tenderness, even when pressure was exerted, over the

abdomen—in fact, she was in the condition of euphoria, the most dangerous of all conditions in such cases. At 4 P.M. her temperature was 105°, her pulse could not be counted, and she was, in fact, moribund. With Dr. Kidd's assistance Dr. Cole-Baker performed an abdominal hysterectomy by Porro's extra-peritoneal method. The appendages were removed with the uterus. By 8 P.M. (i.e., in three and a half hours) the temperature had fallen to 97·4° and the pulse to 90. Convalescence was complete in 26 days; the sutures were removed on the ninth day and the stump separated on the twelfth day. The patient was seen by Dr. Cole-Baker on Jan. 4th, 1900. The cicatrix was perfect and much diminished in length and breadth. The patient was fat and said she never felt better. There was no vesical trouble whatever—in fact, micturition was not nearly as frequent as before the operation. The tumour after removal revealed a condition of things that certainly had not been suspected. The diagnosis of a myoma was correct, no doubt; but it was found that this myoma (which was of about the size of a fœtal head at term) had caused a rupture of the uterus at the fundus between the two orifices of the Fallopian tubes, and that the myoma was sitting in the uterine wall much as an egg does in an egg-cup. There had been no hæmorrhage whatever into the abdominal cavity, and there was only some congestion of the blood-vessels on the surface of the portion of the myoma that protruded through the rent in the uterus. Dr. Cole-Baker said that it had been objected that the operation he performed was not Porro's on the ground that the patient was not "gravid" at the time. However, it was performed by Porro's method and the uterus was a puerperal one.—Dr. KIDD, Dr. SMYLY, and the PRESIDENT discussed the case.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on May 10th, Dr. W. J. Smyly, the President, being in the chair.—Dr. Herbert Snow read the notes of Two Cases of Recto-vaginal Excision for Cancer.—Dr. J. Macpherson Lawrie read a paper on the Indications for the Removal of the Uterine Appendages. After pointing out that the former practice of extirpating ovaries and tubes upon the slightest provocation had given place to a reaction in favour of extreme conservatism, he expressed his belief that the tendency was a healthy one but had gone too far. He offered a contribution to the question based on an experience of 43 cases in which the appendages had been removed for various causes during the last four years. The full notes of all the cases had already been given in two papers read before the British Medical Association in 1897 and 1898. He treated of the following indications for the removal of the appendages: (1) non-suppurative salpingitis; (2) chronic ovaritis; (3) small cystic ovaries; (4) pyosalpinx; (5) suppurating ovarian cysts; (6) uterine fibro-myoma; and (7) tubal pregnancy. The first three conditions were often found associated, as were also the fourth and fifth; this gave four groups of cases in which he had operated as follows: (1) for salpingitis, ovaritis, and cystic ovaries, 32 cases; (2) for pyosalpinx and suppurating ovarian cysts, six cases; (3) for uterine fibro-myoma, three cases; and (4) for tubal pregnancy, two cases. There was only one death among the 43 cases, and this was in the first group, in the case of a patient who was very enfeebled, the operation having been delayed too long. In the first group of cases the principal symptoms were great pains of several years' duration, dysmenorrhœa and dyspareunia, profuse and constant leucorrhœa, sterility, pallor, emaciation, and general ill-health incapacitating the patient from attending to her employment or household duties. He had always tried palliative measures for a longer or shorter time, but had never found them efficacious. Several arguments had been used against operating on these cases. Some said that these patients were hysterical and that no operation would cure them; others considered that time was all that was necessary to effect a cure; some argued that the condition was not one that destroyed life and that therefore no operation was warranted; and, lastly, it was urged that the ovaries and tubes in these cases were not unhealthy and therefore ought not to be removed under any circumstances. All these arguments were reviewed in detail and their fallacies exposed. Conservative methods of surgery had been recommended in these cases, but Dr. Lawrie contended that in most cases nothing short of removal of the offending organs was of any avail. In the second group the point at issue was not as to the propriety of operating but as to the best method. He shared the view of some surgeons that some cases were best approached by the vaginal route, but contended that in the majority of cases the abdominal route answered best in dealing with pyosalpinx. With regard to the third group he believed that in spite of the progress of hysterectomy there were still cases in which fibro-myoma was best treated by the removal of the appendages. Such cases fell into two classes: firstly, cases in which the tumour was small and the appendages were unhealthy; and secondly, cases in which the patient was in a very enfeebled condition through profuse hæmorrhage. The latter indication had been dwelt upon in a recent paper by Mr. Furneaux Jordan. If a second operation were required later this was better than to do a more brilliant operation in the first instance and lose the patient. He did not enter upon the question of neurosis as an indication for operation because he did not consider it to be such. It was the practically unanimous experience of a large body of operators in former years that the operation was not only ineffectual for the cure of neurosis, but actually harmful.—The discussion on the paper was postponed to the next meeting.—Various specimens were exhibited by Dr. William Walter, Dr. Frederick Edge, Dr. F. W. Ramsay, and Dr. Herbert Snow.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held on May 4th, Dr. J. F. W. Silk, the President, being in the chair.—Mr. Carter Braine read notes of three cases of Failure of Respiration under Anæsthesia. In the first case, a male, aged 59 years, was operated upon for very extensive malignant disease of the tongue and mouth. Chloroform was given throughout and the patient struggled violently during the induction of anæsthesia, but subsequently he became quiet. The breathing ceased very suddenly before the operation was commenced. Owing to the fixation of the tongue it could not be drawn forward. Compression of the chest and hyper-extension of the neck produced practically no results, and tracheotomy had to be resorted to. The patient recovered, but the operation was abandoned on account of the extent of the disease. In all probability the cessation of respiration was due to œdema of the larynx. The second case was that of a male, aged 65 years, who showed marked senile changes—e.g., tortuous arteries and arcus senilis. He was anæsthetised with nitrous oxide and ether. While the colour and pulse remained good the respirations gradually faded away but were re-established by artificial respiration. This failure of respiration occurred in the same way every now and then during the course of the operation which lasted over an hour. In the third case, a male, aged 45 years, thick-set, stout, and flabby-looking, was operated on for the radical cure of a hydrocele. Nitrous oxide and ether were administered from a small Clover's inhaler, the patient struggling and becoming blue during the induction. The lividity gradually increased, the mouth became tightly closed, and breathing ceased. After much difficulty owing to the clenched teeth the mouth was opened and rhythmic tongue traction was employed, and the patient recovered.—Dr. Dudley Buxton thought that in the first case it would have been better if the surgeon had performed tracheotomy earlier. He had met with cases similar to the second and he thought that in these cases the condition was sometimes preliminary to vomiting. Rhythmically jerking the jaw forward and upward improved the respirations. Cases of spasmodic closure of the jaws were difficult to deal with, but he did not think that laryngotomy was often called for under these circumstances.—The President suggested that the anæsthetist should urge the performance of tracheotomy preliminary to the operation in cases such as the first of those mentioned by Mr. Carter Braine. He did not think that spasmodic closure of the jaw called for such a severe measure as laryngotomy.—Mr. R. W. Lloyd, Mr. G. Eastes, Mr. H. C. Crouch, and Dr. E. A. Starling also discussed the cases, and Mr. Carter Braine replied.—At the annual meeting, held subsequently, the following officers of the society were elected for the ensuing year:—President: Dr. J. F. W. Silk. Vice-President: Mr. F. Woodhouse Braine. Treasurer: Mr. George Eastes. Members of Council: Dr. E. H. Grant Morris and Mr. W. G. Copestake (Derby). Secretaries: Dr. R. J. Probyn-Williams and Dr. Harold Low. Auditors: Mrs. F. M. Dickinson Berry, M.D., and Dr. F. W. Cock.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on May 18th, Mr. A. W. Galloway, the President, being in the chair.—Dr. Alexander Morison read a paper on the Use of Mercury in the Treatment of

Cardiac Failure due to Arterio-Sclerosis. He founded the paper on the case of a man, aged 67 years, whose legs were swollen, as was the abdomen up to the waist, who was sleeping badly, who was cyanosed, orthopnœic, passing but little urine and that albuminous, and whose heart-beats were much more frequent than the pulse at the wrist. After three weeks' treatment by another physician with hypnotics, one grain of calomel daily, light diet, rest in bed, strophanthus, and later digitalis, his condition was worse than at first. Then Dr. Morison put the patient on pulvis digitalis, pulvis scillæ, pilula hydrargyri, and extractum hyoscyami, of each one grain three times a day, with brandy one ounce thrice daily and a full hospital diet. The result was that in three weeks he was as well as he previously was ill. Dr. Morison discussed the effect of mercury, expressing a view that the resulting good was partly due to a direct vaso-dilatation and partly to an increased elimination of metabolic products.—Mr. E. Campbell Hearne showed a man, aged 21 years, who had a congenital and increasingly marked central depression of the lower end of the sternum not due to external pressure and whose heart was displaced somewhat to the left.

EPIDEMIOLOGICAL SOCIETY OF LONDON.—At the last meeting of this society certain changes were made in the composition of the council. Dr. Franklin Parsons, the outgoing President, will be replaced in that office by Dr. Patrick Manson, C.M.G., while Dr. Bruce Low becomes foreign secretary for South America, Dr. Armand Ruffer foreign secretary for Egypt and the Red Sea, Dr. W. J. R. Simpson foreign secretary for India, and Dr. A. Shadwell foreign secretary for Portugal. The society is about to celebrate the fiftieth anniversary of its foundation by a commemoration dinner which will be held on July 13th, and it is expected that on this occasion there will be a large attendance not only of members but of many distinguished epidemiologists who will be the guests of the society.

Reviews and Notices of Books.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. LXI., Whichcord–Williams. London: Smith, Elder, and Co. 1900. Pp. 476. Price 15*s.*

THE most important historical personages in this volume are no doubt two of the kings—viz., William I. in the eleventh century and William III. in the seventeenth century. Art is represented by Sir David Wilkie (1785–1841); mechanical engineering by Sir Joseph Whitworth (1803–1837); natural history by Gilbert White (1720–1793); and philanthropy by William Wilberforce (1759–1833), whose three sons (Robert Isaac, Henry William, and Samuel), belonging partly to the Anglican and partly to the Roman communion, were very prominent in the theological controversies of the period.

The medical biographies are 20 in number, including those of one president of the Royal College of Physicians of London, one president of the Royal College of Surgeons of England, and one president of the Royal College of Physicians of Edinburgh. Of the whole number only six were born during the present century. Daniel Whistler was born in Essex in 1619, studied medicine at the University of Leyden, and graduated there as M.D. in 1645. His inaugural dissertation at Leyden was the first printed book on rickets; it was reprinted in 1684. Whistler's thesis contained no original observations and took nothing from the originality of Glisson's elaborate "Tractatus de Rachitide" published in 1650. Whistler proposed the name "paedosplanchnosteocaces" for the disease, but no subsequent writer has used the word. He was incorporated M.D. at Oxford in 1647, was elected Professor of Geometry at Gresham College in 1648, and was at the same time Linacre reader at Oxford. He was elected Fellow of the Royal College of Physicians of London in 1649, delivered the Harveian oration in 1659, was 12 times censor, registrar from 1674 to 1682, treasurer in 1682, and president of the College in 1683. His house was in the College in Warwick-lane. He was negligent as registrar and as president of the College he took little care of its property. He died in 1684. Robert Whytt was born in Edinburgh in 1714, studied medicine in Edinburgh and London and on the continent, and took the degree of M.D. at Rheims in 1736. In 1737 the degree of M.D. was conferred on him by the University of St. Andrews, in 1738 he was elected Fellow of the Royal College of Physicians of Edinburgh, and in 1763 he became President of the College, an office which he retained till his death in 1766. In 1761 he was made first physician to the King in Scotland. He was the author of several medical works, from which translations were made into French and German. He was great-grandfather of George John Whyte-Melville (1821–1878), sportsman, novelist, and poet. Anthony White, a native of the county of Durham, where he was born in 1732, was apprenticed to Sir Anthony Carlisle, and was admitted M.R.C.S. Eng. in 1803. In 1831 he delivered the Hunterian oration, and he became vice-president in 1832 and again in 1840, serving the office of president in 1834 and 1842. He graduated as M.B. at Cambridge University in 1804, joined the surgical staff of the Westminster Hospital in 1806, and also filled the office of surgeon to the Royal Society of Musicians. He died in 1849. He was the first to excise the head of the femur for disease of the hip-joint, a proceeding then considered to be so heroic that Sir Anthony Carlisle and Sir William Blizard threatened to report him to the College of Surgeons. He performed the operation with complete success and sent the patient to call upon his opponents. Sir William Wilde was born in the county of Roscommon in 1815, received his medical education in Dublin, and obtained his diploma as a surgeon in 1837. He subsequently spent three years in studying otology and ophthalmology in London, Berlin, and Vienna, and, settling in Dublin in 1841, he practised in these specialties. He applied the first thousand pounds he earned at his profession to founding St. Mark's Ophthalmic Hospital in Dublin. His works, "Epidemic Ophthalmia" (1851) and "Aural Surgery" (1853), obtained for him in 1853 the appointment of surgeon-oculist-in-ordinary to the Queen in Ireland—a post which was specially created in his honour. He wrote several books on other branches of medicine and anatomy, founded and edited the *Dublin Quarterly Journal of Medical Science*, and produced some important works on Irish antiquities and topography. He wrote in three volumes a descriptive "Catalogue of the Contents of the Museum of the Royal Irish Academy"—the first volume appearing in 1858—which is described as "a monumental work of archæological erudition and insight." He was knighted in 1864 and died in 1876. Tobias Whitaker was born probably in 1600 or 1601, and practised physic first in Norwich and then in London. In 1638 he brought out a book in praise of wine, which he regarded as a universal remedy against disease. In 1660 he was appointed physician-in-ordinary to the household of Charles II. with a salary of £50 a year. He died in 1666. Charles White, only son of Thomas White, a medical man, was born in Manchester in 1728, and studied medicine in London and Edinburgh. Returning to Manchester, he joined his father, and in 1752 was instrumental, along with Joseph Bancroft, merchant, in founding the Manchester Infirmary, to which he was afterwards surgeon for 38 years. He was admitted M.R.C.S. Eng. and F.R.S. on the same day in 1762. In 1781 he took an active part in the foundation of the Manchester Literary and Philosophical Society and was one of its first vice-presidents. In conjunction with his son and with the assistance of Edward and Richard Hall he founded in 1790 the Manchester Lying-in Hospital, now St. Mary's Hospital, and was consulting surgeon there for 21 years. White "was the first to introduce what is known as 'conservative' surgery." In 1768 he removed the head of the

humerus for caries; in 1769 he first proposed excision of the hip, and was one of the first to perform excision of the shoulder-joint. He was also the first to describe accurately "white leg" in lying-in women. He died in 1813. Francis Buchanan White White was born at Perth in 1842, studied medicine in Edinburgh University and graduated there as M.D. in 1864. Being independent of his profession he devoted himself entirely to the study of plants and animals, his contributions to the *Entomologist's Weekly Intelligencer* beginning as early as 1857. In 1867 he joined in founding the Perthshire Society of Natural Science of which he was president for many years and his communications to which were 100 in number. He also contributed articles to many journals and collections of "reports" and wrote two separate treatises, one on the lepidoptera of Perthshire and the other on the flora of the same county. He died in 1894. James Whitehead was born at Oldham in 1812 and attended the Marsden-street School of Medicine in Manchester; he took the diploma of L.S.A. in 1834 and that of M.R.C.S. Eng. in 1835; in 1845 he was admitted F.R.C.S. Eng. after examination; he graduated as M.D. St. And. in 1850 and became M.R.C.P. Lond. in 1859. In 1838 he began to practise in Manchester, and in 1842 he was appointed demonstrator of anatomy at the Marsden-street School of Medicine. In 1856 he founded, jointly with Dr. Schoepf Merei, the Clinical Hospital and Dispensary for Children which became subsequently the Manchester Clinical Hospital for Women and Children. He was lecturer on obstetrics at the Royal School of Medicine, and for 15 years he acted as surgeon to St. Mary's Hospital for Women and Children. He died in 1885. John Wigan, son of the rector of Kensington, London, was born in January, 1695-6, entered at Oxford University in 1714, and graduated in Arts in March 1720-1. In 1726 he became principal of New Inn Hall, Oxford, and about the same time was appointed secretary to the Earl of Arran, the chancellor of the university. He graduated as M.D. in 1727 and was admitted F.R.C.P. Lond. in 1732, when he resigned his office at New Inn Hall, settled in London, and was elected physician to Westminster Hospital in 1733. As early as 1718 Wigan published a translation of a treatise upon the cure of fevers from the original of Longinus. His great work was a splendid folio edition of Aretæus, issued from the Clarendon Press in 1723. When Boerhaave published his edition of the same author in 1735 he acknowledged himself indebted to Wigan's work, and Dr. Francis Adams of Banchory, Aberdeenshire, spoke highly of it in his edition of Aretæus in Greek and English, published by the Sydenham Society in 1856. Wigan died in Jamaica in 1739. Robert Wight was born in East Lothian in 1796, studied medicine at Edinburgh University, and graduated there as M.D. in 1818. In 1819 he entered the East India Company's Medical Service as an assistant surgeon, and from 1826 to 1828 was naturalist at Madras. He retired from the Company's service in 1853 and died near Reading in 1872. Between 1831 and 1853 he published several important works on Indian botany, some of them with the assistance of George Walker-Arnott, who was subsequently professor of botany in the University of Glasgow. James John Garth Wilkinson, a native of London, where he was born in 1812, took the diplomas of M.R.C.S. Eng. and L.S.A. in 1834, and practised homœopathy at rooms in Wimpole-street. He was a voluminous writer, chiefly on the doctrines of Swedenborg, and in opposition to vaccination. He died in 1899. Robert Willan was born in Yorkshire in 1757, studied medicine at Edinburgh University and graduated there as M.D. in 1780. Having settled in London, he was appointed physician to the Public Dispensary on its establishment in the early part of 1783, a position which he resigned in 1803. The work by which he is best known is "The Description and Treatment of Cutaneous Diseases." It was published in parts, the last of which appeared in 1803. He died in Madeira in 1812. Charles James Blasius Williams was born in Wiltshire in 1805, studied medicine in the University of Edinburgh, and graduated there as M.D. in 1824. In 1835 he was elected F.R.S.; in 1839 he became professor of medicine to University College and physician to University College Hospital, in 1840 he was admitted F.R.C.P. Lond., and soon after his admission he endeavoured to alter the constitution of the Royal College of Physicians of London. He took part in 1841 in founding the Consumption Hospital at Brompton. When the Pathological Society was formed in 1846 he was elected its first president. He was the author of several published works and in 1874 was appointed physician extraordinary to the Queen. In 1875 he gave up practice and retired to Cannes, where he died in 1889. Before leaving London he made an attempt to alter the constitution of the Royal Society. Richard D'Alton Williams was born in Dublin in 1822 and began to write verses at an early age. In 1843 he commenced the study of medicine at St. Vincent's Hospital, Dublin, joined the Young Ireland movement, published ballads and war songs in various newspapers, and was tried for treason felony but acquitted. He obtained his medical diploma in 1849 and soon afterwards went to the United States of America, where he died in 1862. Robert Williams was born in London about 1787, graduated as M.D. at Cambridge University in 1816, was elected assistant physician to St. Thomas's Hospital in the same year and physician in 1817, an office which he retained till his death in 1845. He discovered the curative power of iodide of potassium in syphilis and introduced bromide of potassium into English practice, though he did not employ it in the treatment of epilepsy.

Diseases of Children: a Manual for Students and Practitioners. By GEORGE M. TUTTLE, M.D., attending Physician to St. Luke's Hospital, &c. Series edited by BERN B. GALLAUDET, M.D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Illustrated with five plates in colours and monochrome. London: Henry Kimpton. 1900. Pp. 386. Price 7*s.* 6*d.*

THE author states in his preface that in preparing this manual for publication he has had especially in view the requirements of the beginner in the study of pediatrics. He has endeavoured to cover the subject fully yet in a concise form, "dealing more largely with the physiology of infancy and with artificial feeding than with the pathological states found in childhood." The normal development of the infant is well described, but the consideration of the "diseases of the new-born infant" is much too brief. Students or practitioners who have studied larger works may find sufficient material to refresh their memories, but we doubt whether a student knowing nothing about diseases of children would be much benefited by a perusal of these pages. For instance, the whole subject of "spina bifida" is disposed of in 18 lines, five of these being occupied with the "definition."

On the other hand, the subject of "feeding of infants" is discussed at great length, out of proportion to the space devoted to other matters, and is more suited for an elaborate treatise on "diseases of children" than for an elementary text-book. We doubt whether any practitioner would care to devote the necessary time to a study of "Coit's decimal method."

Some of the best sections of the book are those on Diseases of the Intestines. The acute affections are well described and some useful hints are given as to treatment. Many of the sections in the chapter on Diseases of the Nervous System are also interesting.

A good deal of information is also contained in the chapter on Infectious Diseases and especial stress is laid on the treatment of the various affections.

Practice of Medicine: a Manual for Students and Practitioners. By GEORGE E. MALSBURY, M.D., Assistant to the Chair of Practice, Medical College of Ohio, University of Cincinnati. Series edited by BERN B. GALLAUDET, M.D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Illustrated with 45 engravings. London: Henry Kimpton. 1900. Pp. 400. Price 7*s.* 6*d.*

WE are not advocates for condensed manuals of scientific subjects. A student of medicine should endeavour to obtain as thorough a knowledge of his profession as possible and should, therefore, study the best text-books available. Dr. Malsbury, however, in his preface makes no suggestion that this manual should take the place of larger works. He states that as "medical progress is so rapid in our day the manuals have special value, in that they may be published in the shortest possible time, and thus place before the reader the more recent advances in medicine. Moreover, a brief epitome presents the subject to the busy practitioner and student in a form more readily accessible than is possible in a lengthy treatise." If such be the intention of the writer we have nothing to say against it. A student may refresh his knowledge by skimming the book through immediately before an examination, but we are quite sure he would fail to satisfy the English examining boards if he trusted to this "manual" only. A practitioner also might find it useful for reference. The descriptions of the symptoms of the various diseases are clear and concise and the remarks on treatment are also good, but consideration of pathology is conspicuous by its absence. The book is essentially written from a clinical point of view. The author is rather behind the times in placing croupous pneumonia amongst diseases of the lungs instead of amongst infections, although in speaking of the etiology he states that the "infectious agent is the micrococcus pneumoniæ croupose (Sternberg) or the bacillus of Friedlander." On the other hand, acute articular rheumatism, chronic articular rheumatism, gonorrhœal rheumatism, and muscular rheumatism are all placed under the heading of infections, a classification which is not universally recognised.

L'Année Chirurgicale: Revue Encyclopédique de Chirurgie Générale et Spéciale. (The Surgical Year: an Encyclopedic Review of General and Special Surgery.) Publiée par le Docteur A. DEPAGE, Agrégé à l'Université Libre de Bruxelles, Chirurgien des Hôpitaux de Bruxelles. Première Année, 1898. Bruxelles: Lamertin. 1899. Pp. 1970. Price 30 francs.

AMONG the many annual *résumés* of the progress of the medical sciences there is none which is more thorough than the volume before us. It deals only with surgery, and this is its first appearance. Its chief competitor in this branch of medical science is a German year book, the third issue of which we reviewed a few weeks ago. Every paper dealing with any department of surgery and appearing in the year 1898 is in this volume to be found classified and in most cases a *précis* of the article is added. The amount of work involved must have been enormous and the able editor, Dr. Depage, has been assisted by 58 contributors, and especially by Dr. A. Dekeyser and Dr. L. Dekeyser who have acted as sub-editors. The book commences with the history of surgery. Then follows an account of the treatises on general surgery. The chief statistics published during the year are next given, but statistics relating to any special portion of the body are with the surgery of that region. Radiography, general therapeutics, and anæsthesia follow, and then the various surgical diseases are taken in order. First come those affections to which all tissues are liable and then follows the surgery of special organs. An idea of the method pursued will be best given by an example of one organ. For instance, commencing at page 1218 we have a list of the titles of 37 papers and works dealing with the spleen published in 1898. Of these there are 12 from French sources, seven from German, seven from Russian, five from English or American, five from Italian, and one from Spanish. Of nearly everyone of these an abstract is given, and these abstracts are classified, so that we find first the 10 summaries relating to congenital malformations and to injuries. In the next section appear seven extracts dealing with inflammatory affections, parasites, and new growths of the spleen, and lastly we have, in the third section, 17 abstracts relating to the operative surgery of the spleen and the statistics. Three small papers are only mentioned and not abstracted. In some cases the *précis* occupies a whole page or even more, while in others it fills only a line. Striking variations in the type employed draw attention to the subjects dealt with and the authors quoted. It will be seen that such an aid is invaluable for any author who has to write a paper on any surgical subject, or even for a surgeon who wishes to know what advances have recently been made in any department of surgery. Here the surgeon will find an account of the latest methods of performing any operation, with the statistics relating thereto; should he require even fuller particulars than are given here he can turn at once in any good medical library to the original papers, though this can be but rarely necessary. We have had occasion to refer to this volume many times recently and we bear willing testimony to the value of its help and the general accuracy of its extracts and references. The library of every medical school should contain this useful volume. An index of names is provided, and the only improvement we can suggest is that there should be an index of subjects. It is difficult to think that such a colossal undertaking as this can prove remunerative to its editors and publishers, but we sincerely hope that the results will be sufficiently favourable to justify them in continuing the issue of this valuable work.

The Student's Handbook of the Practice of Medicine. By H. AUBREY HUSBAND, M.B., C.M. Edin., &c., formerly lecturer on Medical Jurisprudence and Public Health in the Extra-Academical School, Edinburgh. Fifth edition. Illustrated. Edinburgh: E. and S. Livingstone. 1900. Pp. 783. Price 10*s.* 6*d.*

THIS handbook is "designed for the use of students and junior practitioners," and as the fifth edition has been called for we may fairly assume that the efforts of the author have been appreciated. Chief stress has been laid on the clinical aspects of disease and on treatment. The symptoms of the various diseases are clearly described and the whole work has been brought thoroughly up to date. The diagnostic tables which are found scattered throughout the book will be found very useful for reference and contain a large amount of information in a small space. The headings of the sections and sub-sections are also well devised. The English synonyms of each disease are given, and also the Latin, French, and German terms correspondingly used. A long list of prescriptions is given at the end of the book, written in full, together with the conditions in which they may be employed. This may be useful to junior practitioners. The work terminates with a "glossary" giving the meaning of a large number of medical terms.

JOURNALS.

The *Veterinary Journal* for May consists mainly of papers which have been read recently before various veterinary medical associations. These include one by Professor W. Pritchard on Sutures, another by Mr. W. Hunting on

Shoulder Lameness in Horses, and a third by Professor Stockman on the Method of Infection in Black Quarter. The last-named contains many interesting facts and an account of several original experiments made to test the vitality of the organism which is known to cause the disease. Abstracts are made from the lectures of Professor Rose Bradford on "Rabies" and the address on "Heredity in Disease" by Professor D. J. Hamilton. Original articles are poorly represented.

The *Veterinarian*.—The Veterinarian for May commences with an account by Professor Mettam of an interesting post-mortem specimen of a mare's heart with large cauliflower-like vegetations upon the valves. The mischief had been diagnosed during life, but of course no treatment other than complete rest could be prescribed. Photographs are given of an interesting cyclopean monster, the head of which was dissected and carefully described. The papers on Soundness by Mr. Wallis Hoare and on Louping-ill, by Mr. E. G. Wheler are continued, the latter being concluded by a summary of measures suggested for prevention. The proceedings of the Council of the Royal College of Veterinary Surgeons and scientific jottings occupy the remainder of the number.

Analytical Records
FROM
THE LANCET LABORATORY.

CHINA TEA.

(THE EPICUREAN TEA CO. AGENTS: MCINTYRE AND CO., 9, MINCING-LANE, LONDON, E.C.)

WE believe this to be, as stated, a pure China tea, judging from the results of our analysis. On infusion it yields a minimum amount of those astringent principles which are undoubtedly responsible for the ill-effects produced by powerful Indian teas. The infusion of China teas on cooling yields, as a rule, no deposit, whereas a similar infusion of Indian tea yields a heavy deposit, consisting largely of tannin with some caffeine. This fact affords a simple means of discriminating between powerful and delicate teas. The sample under examination yielded an excellent tea of delicate character and quite free from the so-called pungent qualities of the heavier teas. It is well known that China tea is much more suitable for the invalid than is India tea. Indeed, much of the harm arising from the taking of copious and strong draughts of tea would be avoided by the use of lighter tea, which, moreover, contains just the same proportion of the stimulating principle, caffeine, as do the heavier teas. The results of analysis were quite normal. The moisture amounted to 12·24 per cent., the mineral matter to 5·75 per cent., and the alkalinity of the ash was found to be equivalent to 1·56 per cent. reckoned as potash. This last result is a useful factor in demonstrating whether exhausted leaves are present. This tea is worthy of recommendation.

DRUMALBAN WHISKY.

(FINDLATER, MACKIE, TODD, AND CO., LONDON-BRIDGE, LONDON, S.E.)

This spirit gave normal results of analysis on examination which were as follows: alcohol, by weight 40·30 per cent., by volume 47·67 per cent., equal to proof spirit 83·54 per cent.; extractives, 0·17 per cent.; mineral matter, *nil*; and acidity reckoned as acetic acid, 0·027 per cent. A feature worthy of remark in this analysis is the comparatively small amount of extractive matters, though judging from the mellow character of the spirit it has evidently been matured. In wood of course this means the extraction of a certain amount of resinous bodies. It possesses the character and taste of a pure Highland whisky but is somewhat sweet, which, however, is not due to saccharine matters but to peculiar ethylic products formed during maturation. There is no suggestion of the presence of objectionable alcohols of the "higher series."

NAO FOOD PREPARATIONS.

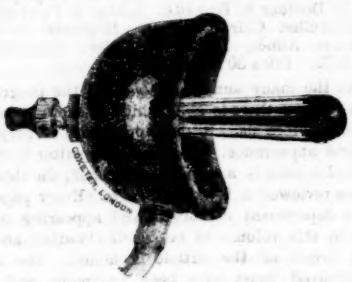
(THE NAO FOOD COMPANY, 2, GREAT GEORGE-STREET, LONDON, S.W.)

We have received a number of food preparations from this company which are of distinct merit. For the purposes of analysis we have taken the "Nao Cup" as a type. This may be called a liquid beef preparation. Its proximate analysis was as follows: moisture, 63·85 per cent.; mineral salts, 11·18 per cent.; and organic matter, 24·97 per cent. The organic matter contained 5·27 parts of insoluble matter consisting chiefly of the albuminous clots which occur in ordinary beef-tea, some fat, and a little husk of some added flavouring substance, proteids 18·37 per cent., and non-nitrogenous matters 3·17 per cent. The liquid contained a small quantity of unaltered albumin but no syntonin. Bromine precipitated proteoses to the extent of 1·18 per cent. The preparation yields a pleasant beef-cup which is at the same time nourishing, stimulating, and appetising. From the dietetic point of view it is important to note, too, that some amount of fat is also retained in the preparation. The same manufacturers prepare the following articles in portable form: albuminoid thick soup, clear dinner soup, beef rations, chicken essence, beef essence, mutton essence, and albumin and marrow paste. The last is a powerful and nutritious food, while the rest give evidence of a knowledge of the requirements of preparations of this kind in which are retained the nourishing as well as stimulating elements of the original meats.

New Inventions.

NEW FORM OF VAGINAL DOUCHE TUBE.

IN the appliance depicted in the accompanying illustration the flushing current is altogether from above downwards and the tube is adjustable to the length of the vagina, while the walls of the latter are kept apart by stout unrustable wires surrounding the central tube so as to make the flushing more complete. The perforations at the top of the tube through which the fluid is forced are so placed that they cannot possibly come into contact with the vaginal walls, which of course would prevent exit of the fluid.



The apparatus accordingly differs considerably from any other vaginal douche tube extant. The receptacle for waste has an inflatable indiarubber edge which should make it comfortable to the patient and prevent any wetting of the bed or person. The fluid collecting in the receptacle (which is held in close proximity to the vulva) finds exit through an indiarubber tube attached, the end of which can be dropped into any convenient vessel. The appliance can be used with any indiarubber vaginal syringe as well as douche, and will be found on trial to commend itself more especially to obstetricians and gynæcologists. The makers are Messrs. Coxeter and Son, London.

ALEXANDER DUKE, F.R.C.P. Irel.,
Ex Assistant Master to the Rotunda Hospital, Dublin.
Cheltenham.

THE LANCET.

LONDON: SATURDAY, MAY 26, 1900.

THE conduct of vessels at sea as well as the present system of railway travelling is controlled and directed during the day either by well-understood rules of the road, as in the case of a vessel, or by the exhibition of signals, as on railways. A ship is not easily overlooked; its movements are obvious enough by day and collisions are on the whole rare; and the same may be said of railway traffic, for the accidents are certainly not numerous when the enormous number of trains running is considered. It is only when a proper look-out is not kept that an accident occurs and then blame falls on the watch or on the driver. No one would dream of putting a man who was unable to see ten yards before him in charge of an express or of a fast steamer. At night both vessels and trains are guided by coloured lights, and the rapid recognition and quick discrimination of such lights are essential to determine whether the ship shall be steered to the right or left or whether the engine-driver may proceed at full speed, or "slow down," or stop. A failure to discriminate the lights leads in both instances to disaster.

As so much depends upon the appreciation of colour it might be supposed that every care would be taken by those in authority that the vision of men placed in charge of vessels should be perfect, that their appreciation of colour should be the same as that of the usual run of mankind, and that they at least should not belong to the small minority who perceive no difference except one of shade or tone between red and green. As red both at sea and on land is the danger signal it follows that if the responsible person in charge be unable to recognise red the danger signal is to him valueless, and if he mistakes it for green the lives of many may be sacrificed. With the knowledge that a confusion between red and green might easily lead to destruction whilst a clear perception of the difference meant safety would anyone trust himself on a ship with a colour-blind man at the helm? Yet our readers will be surprised to learn from an article on this subject written by Dr. EDRIDGE-GREEN and published in another column of our present issue that not a single medical man, far less a trained ophthalmic surgeon, is employed in the examinations conducted by the Board of Trade to determine the presence of colour-blindness in the candidates; that such tests as are commonly applied are uncertain and misleading; that men who have been pronounced defective have actually been passed on appeal; and that so inadequate and imperfect are these tests that men who have been rejected can be shown to possess good perception of colour. Such confusion, such errors, constitute some of the unsatisfactory results of the present practice. The small percentage of men rejected by the Board of Trade for defective colour vision is itself remarkable. During the last 12 years it has ranged between 0·67 and 1·39 per cent., and Dr. EDRIDGE-GREEN[1] remarks that, incredible as it may appear, shipowners are able to, and really do, employ colour-blind officers who have been rejected by the Board of Trade and who may have been discharged by other companies. Dr. EDRIDGE-GREEN takes exception to the Holmgren method of testing colour-vision, which, as every one knows, consists in directing the candidate to select wools from a large number to match a particular specimen given to him by the examiner, maintaining that in addition to this the examinee should be required to name the several colours, on the ground that in selecting the wools he may be guided by tone as well as by colour, and may be therefore unduly rejected, whilst if he points to a red light and calls it green he is either colour-blind or dangerously ignorant of colour. A source of danger to which little attention has been hitherto given is also dwelt upon by Dr. EDRIDGE-GREEN—viz., the occurrence of a central scotoma, or blind spot, of limited extent. It is manifest that a person whose retinæ are insensitive owing to choroiditis attacking the fovea centralis and its immediate vicinity may be very well able to distinguish and name the colour of a considerable mass of any coloured object that may be placed before him because it affects the peripheral portions of the retina, and yet may wholly fail to see the small beam of light that proceeds from a ship's lantern or a signal-post's bull's-eye.

The time has surely come when the Board of Trade should institute a properly conducted examination by an expert who might hold a series of inspections at each of our seaport towns and should have authority to call before him all sailors of whatever class, from the captain to the able-bodied seaman, and subject them to definite tests. There are many men who, whilst they can readily discriminate a piece of green from a piece of red glass—that is, can recognise and name correctly two saturated colours—yet are unable to distinguish a piece of wool of a light green from one of a pink colour. Such men are partially colour-blind and are, if anything, more dangerous than those who are colour-blind for the saturated colours. The latter as a rule know their defect and proceed accordingly, relying on someone else for information. At any rate, the futility of the present mode of examination is sufficiently shown by the statement made by Dr. EDRIDGE-GREEN that he examined a man who was so colour-blind that he could not see a red light at all and yet he passed the Holmgren wool test with ease. The tests proposed by Dr. EDRIDGE-GREEN, whose paper will be read with interest, seem to possess considerable advantages over the wool test, since being made with a lantern and with coloured slides they approximate much more closely the conditions under which the importance and value of colour-vision are ordinarily observed.

AS regards the increase of nervous diseases in the more restricted sense Professor ERB of Heidelberg, one of the most eminent neurologists of the day, has recently called attention in a lecture published in the *Revue*

Scientifique to some of the more important etiological factors concerned in the production of the neuroses. He dwells upon the increase of the causes of nervous irritation and depression, the greater anxiety, hurry, and mental toil of life, the overtasking at school, the increasing amount of irksome study men have to go through in order to enter the learned professions, the more exciting nature of their amusements, the more stimulating character of their diet, and the restlessness introduced into their lives through the facilities of travel and intercommunication. The causes being thus increased the effects are bound to follow. It may be said that the strains and stresses incidental to the above-mentioned causes fall most severely upon the lower and middle classes. The increase of competition and of struggles among aspiring persons of a lower class to rise to a higher, the wars of labour *versus* capitalism, the anxieties of disputes and strikes, and the formation of big hydra-headed companies which swallow or crush up smaller men and businesses, are all part of the social conditions which make life harder and less agreeable to many. At the same time compensating influences have been at work in many respects. Housing, warming, and ventilation are better, the standards of bodily comfort are raised, the progress of hygiene has diminished the ravages of communicable diseases, and drainage and sanitation are improved. To estimate the net result a balance has to be struck, and if the balance persists on the wrong side of the account then Professor ERB'S contention is right that the causes of insanity and nervous affections tend as a whole to increase.

The seriousness of the lunacy problem is, as a matter of fact, getting more evident year by year, and two recent papers published respectively by Dr. W. W. IRELAND[1] and Mr. W. J. CORBET, M.P.,[2] call for special notice in this connexion. Dr. IRELAND addressed a number of questions to a number of medical men as to whether an increase had been observed in the relative frequency of diseases of the nervous system, whether new forms had come into prominence, and whether any change of type had been observed in such diseases. As was to be expected experiences and impressions varied as recorded in the replies received. Amongst those who gave a categorical reply that nervous diseases were on the increase were Sir FREDERIC BATEMAN of Norwich, Dr. EDDISON of Leeds, Dr. JAMES GOODHART of London, and Dr. ERNEST REYNOLDS of Manchester. Dr. JULIUS ALTHAUS considered the increase to be decided among the functional and trophic cerebro-spinal diseases. Of the organic nerve affections due to syphilis he stated that they had in his experience decidedly diminished during the last 20 years, and that it was difficult to say that actually new forms had sprung up in our time, except perhaps the neuroses due to influenza. Dr. A. R. URQUHART of Perth, Dr. C. H. HUGHES of St. Louis, U.S.A., and Dr. OSLER of Baltimore were of opinion that nervous diseases were much increasing. Dr. BYROM BRAMWELL was inclined to think that there had been an increase in some of the functional neuroses, and he had definitely formed the opinion that disseminated sclerosis had during the past few years become commoner, and that this was attributable to the fact that in many cases this sclerosis followed from, or had its starting-point in, influenza. Dr. STRACHAN laid much stress upon the evil effects of overtasking children at school, a subject to which he had given much attention. On the other hand, Dr. G. W. BALFOUR of Edinburgh, Dr. D. W. FINLAY of Aberdeen, and Dr. H. BARNES of Carlisle had noticed no increase of neuroses, and Dr. D. J. LEECH of Manchester inclined to the same statement. An interesting note was recorded by Dr. HALLIDAY DOUGLAS, for many years physician to the General Post Office in Edinburgh, who saw many cases of nervous derangements and failures of health amongst the employés, "especially those who did their work under high pressure. The female clerks often required leave of absence from illness." From a table compiled by Dr. S. A. K. STRAHAN of Berry Wood Asylum in his work, "Suicide and Insanity" (London, 1893), it appears that the death-rate in England and Wales in the 25 years between 1866 and 1890 had increased for nervous diseases by 10·2 per cent., for diabetes by 10·3 per cent., for renal disease by 63·4 per cent., and for cardiac disease by 65·9 per cent. From the extensive statistical returns which he discusses, Dr. IRELAND concludes "that the graver forms of diseases of the nervous system have increased in Great Britain as they are said to have done in France and Germany during the last 45 years." In Scotland there seems to have been a pause in the increase from 1885 to 1897 which remains unexplained.

Regarding the increase of insanity generally in England Dr. IRELAND does not limit himself to a dry and bare statistical enumeration. His statement that idiocy and imbecility have largely increased in Sweden and in Norway, although he is assured that drunkenness has much diminished in those two countries owing to the working of the Gothenburg system, is a weighty fact in favour of the belief of the increase of cerebral diseases. The steady and progressive increase of the number of the insane throughout Europe has now begun to attract public attention and physicians such as KOCH, KOLLMANN, LUNIER, and KRAEPELIN, who have devoted great care to the statistics, have after making every allowance come to the conclusion that there has been a real increase in the absolute number of the insane. In quite recent years this increase in the number of "official lunatics" has become remarkable and has opened many eyes, and Sir JAMES CRICHTON BROWNE has been one of the most explicit exponents of the view that such increase was a real one. In dealing with the official statistics of the United Kingdom both Dr. IRELAND and Mr. CORBET are on common and incontrovertible ground. The lunacy problem is growing more serious year by year and the demands made on society for public lunacy treatment and care are increasing enormously as time goes on. The following remarks by Dr. KRAEPELIN in his "Lehrbuch für Psychiatrie" (1899) are weighty and should be pondered over. "The regular census returns with us indicate with certainty a rapid increase of the insane which far overtops the general increase of the population. The rise is partly accounted for by the greater care of the numeration and the better knowledge of insanity, nevertheless it is undoubted that we have actually to reckon with a very considerable increase of insanity. This is proved not only by the

[1] Scottish Medical and Surgical Journal, May, 1900.
[2] County Councils Gazette, Dublin, March 9th, 16th, and 23rd, 1900.

alarming increase in the number of the insane, but also by the simultaneous rise of the frequency of suicides and the contrast presented by the town and rural populations."

AN article which lately appeared in the *Londoner* on the metropolitan water-supply deserves notice. It is of interest chiefly because the writer, Mr. WHITMORE, has represented Chelsea in Parliament for many years and has also been a prominent member of the London County Council. In either capacity he has been brought face to face with the London water question. Mr. WHITMORE, referring to the report on the London water-supply which has lately been made by Lord LLANDAFF'S Commission, says that this document is now more favourably thought of than it was when it was first issued, and he urges the Government to carry out the recommendations which it contains without delay. Mr. WHITMORE does not, however, state that the recommendations made by Lord LLANDAFF'S Commission are on many points diametrically opposed to the advice which he tendered in the evidence which he gave to that Commission. It may, therefore, be not without interest at the present time to recall the substance of some of the evidence which he gave—evidence founded, it must be remembered, on many years' experience.

At the sixteenth and seventeenth sittings of the Commission, which were held on March 21st and 28th, 1898, Mr. WHITMORE pointed out that he had been a member of the London County Council for three years and that he had given his particular attention to the question of the London water-supply. One of the conclusions at which he had arrived was that the London County Council was not a fit body to undertake the duties of a water authority for London. With this opinion, as readers of THE LANCET know, the report of Lord LLANDAFF'S Commission entirely agrees and the technical evidence given by engineers has conclusively shown that severance of the water undertakings between London and the surrounding authorities on the lines suggested by the London County Council would have been a most expensive, a most inconvenient, and indeed an absurd arrangement. Mr. WHITMORE in his evidence went on to say that if purchase of the companies' undertakings were carried out it would follow that the London County Council must necessarily either nominally or virtually become the water authority. He referred to a Government Bill (commonly called Lord JAMES'S Water Bill), in which an attempt had been made to create a Water Board for the County of London and the area within the jurisdiction of the county councils which make up the area of "Water London"—that is to say, the districts at present supplied partially or entirely by the London water companies (and including the whole of their authorised areas of supply). The Government thought it necessary to give a preponderating voting power to the London County Council, and it would, Mr. WHITMORE argued, be necessary that such a preponderating voice should be given to London if a Water Board were formed. The Bill encountered so much opposition from the county councils whose districts surrounded London that the Government found it necessary to drop it. Now, in the Water Board proposed by Lord LLANDAFF'S Commission no such preponderating voice is suggested for London. Mr. WHITMORE thought the demand for "control" of the water-supply was really a "sentimental" one, and the "sentiment" would not be satisfied unless the London County Council became the controlling body. It was, he urged, unwise to increase the number of governing bodies in London by forming a new board. There were already too many boards. But the public "sentiment" of London would not be satisfied by a secondarily elected body. The Metropolitan Board of Works had died with "universal satisfaction." The Thames Conservancy was not a popular body, the Metropolitan Asylums Board was always being abused. Both these bodies were elected by secondary and not by direct methods. Now if a new Water Board were called into being and another directly elected body were formed the result would not be satisfactory, for there was at the present time great difficulty in getting people to vote at the elections of the bodies already existing and another new body was not wanted. If, on the other hand, a paid nominated body were appointed it would not satisfy the "sentimental" feeling which existed that such a monopoly as the water-supply should be controlled by a popularly elected authority. Another and a very important point Mr. WHITMORE urged, was that the financial difficulties of purchase could not be lightly faced. An amalgamation of the water companies would doubtless be a good thing, but the grievances which existed had been very much exaggerated. The President of the Local Government Board might "benevolently" conduct negotiations with the chairmen of the water companies with a view to forcing an amalgamation. Lord LLANDAFF very pertinently asked in what manner the negotiations could be benevolently conducted and what "birch-rod" the President of the Local Government Board should have up his sleeve. In answer to this Mr. WHITMORE suggested that the high functionary might threaten legislation and that the legislation might have reference to control, but he professed that for his own part he did not understand what was meant by control. An amalgamation of the companies, however, was much to be desired and a general water-rate should be fixed for the whole of London. The companies might "voluntarily" reduce their charges to the lowest rate now charged and they might be led to do this from a fear of oppressive control or of confiscatory purchase.

It is evident that Mr. WHITMORE has largely modified his views between the date at which he gave evidence before Lord LLANDAFF'S Commission and the present time. Which view is correct? The recommendations of Lord LLANDAFF'S Commission are not very fully given by Mr. WHITMORE in his recent article with a reference to which we commenced, and he gives no adequate account of the recommendations made with regard to control of the water-supply, yet the Report advises that new measures of control should be instituted, whether the companies are bought by a newly constituted board or the undertakings continue in the hands of the companies. The recommendations with regard to control are of the greatest value, and in the case of each particular recommendation there is good reason for it. Mr. WHITMORE naturally looks upon the water question from the point of view of the Londoner, and in his double capacity of county councillor and Member of Parliament. As a county councillor he would like to

satisfy any "sentiment" which he thinks it possible there may be in favour of the management of the water-supply by a public authority instead of a private company. As a metropolitan Member of Parliament he must be anxious to be quit of the whole subject. So long as the water-supply is in the hands of water companies any failure of supply in a particular district leads to the abuse of the Parliamentary representative by his constituents. It does not, of course, follow that severe frost would not cause a congelation of water in the pipes even if they were in the hands of a popularly elected Water Board, but in that case it is not the Member of Parliament who will be abused; on the contrary, he will be able to abuse the Water Board; and doubtless all metropolitan Members would be extremely glad if in the future they could be held free from worry in case of any deficiencies in supply or increase in water rents by piously throwing the blame on a body of which they are not members. But quite apart from the expediency or otherwise of giving statutory life to the model Water Board suggested by Lord LLANDAFF'S Commission it is most unlikely that the Government would be able to pass such a measure. The County Councils of Kent, Surrey, Middlesex, and Hertfordshire are altogether opposed to the purchase of the metropolitan water companies' undertakings, and should a serious attempt be made by the Government to pass a Bill diametrically contrary to their wishes and to their interests in this connexion, it is at least possible that the effect of the Bill would resemble that produced by Lord CROSS'S celebrated measure in the year 1878.

Annotations.

"Ne quid nimis."

THE BIRTHDAY HONOURS.

THE list of birthday honours this year is, contrary to all expectation, a very short one. No medical man receives a baronetcy, but four have been made knights—viz., Dr. Hector Cameron, the President of the Faculty of Physicians and Surgeons of Glasgow, and the representative of that body upon the General Medical Council; Dr. J. W. Moore, the President of the Royal College of Physicians of Ireland; Dr. William Bisset Berry, Q.C., Speaker of the House of Assembly of the Cape of Good Hope; and Dr. David Palmer Ross, C.M.G., Surgeon-General of British Guiana. Surgeon-General H. S. Muir, Deputy Director-General of the Army Medical Service, upon whom an enormous amount of work has lately fallen, and Lieutenant-Colonel B. B. Connolly, late of the same service, receive the C.B. Lieutenant-Colonel R. N. Campbell, I.M.S., and Captain C. H. James, I.M.S., receive the Kaisar-i-Hind medal for Public Service in India. This exhausts a singularly meagre list of honours given to medical men, but the whole roll, as we have said, is a very short one. Among other honours which have a distinct interest to medical men it may be mentioned that Veterinary Colonel Henry Thomson of the Army Veterinary Department, and Professor T. E. Thorpe, the Director of the Government Laboratories, receive a C.B., and Mr. A. J. R. Trendell, assistant secretary to the Science and Art Department of the British Museum, is knighted; while the peerage of Strathcona and Mount Royal, which in recognition of the present owner's imperial spirit has been re-granted with remainder to his daughter, will now devolve upon the children of Mr. Bliss Howard, F.R.C.S.Eng. Mr. John Glover, chairman of the City Liberal Unionist Association, who has been knighted, is brother of Dr. Glover, a Direct Representative of the profession on the General Medical Council.

THE LONDON POLYCLINIC.

THE Whitsun term at the Post-Graduates' College in Chenies-street commenced on May 14th and another six weeks' course of practical instruction in the various departments of medicine and surgery is now fairly entered upon. The consultations go on uninterruptedly and are, we understand, attracting increasing numbers both of patients and members. Invitations are issued for an afternoon conversazione for to-day (Saturday, May 26th), when in addition to music and an interesting collection of scientific exhibits opportunity will be afforded for inspecting the new museum which is just out of the builder's hands. This is a handsome room and is well suited for the reception of the valuable collection which, thanks to the generosity of Mr. Hutchinson, will immediately be housed within its walls. This conversazione has been specially arranged that the council's guests may meet Lord Strathcona and Mount Royal, the chairman-elect of the annual dinner which will take place at the Trocadéro Restaurant, Piccadilly-circus, on Thursday, May 31st. The main purpose of the dinner is, of course, to help the funds, for the London Polyclinic, in common with many other institutions which look for public support, is finding the financial outlook unpromising this year on account of the numerous demands on benevolence entailed by the war.

FALSE MEDICAL CERTIFICATES.

A RECENT prosecution at Leeds has decided an important point in connexion with the issue of medical certificates of the cause of death under the provisions of the Births and Deaths Registration Act of 1874. It appears that on the death of an infant, 14 days after it had been seen at the Leeds Public Dispensary, the mother applied at that institution for a medical certificate, which was filled up by a medical practitioner acting as locum-tenent for the medical officer of the institution, who had previously seen the child, but who was temporarily absent from Leeds. The locum-tenent used for the purpose of this certificate one of several blank forms signed by the medical officer and apparently left for use during his absence. When this "partnership certificate" was produced to the registrar he ascertained from the mother of the infant that the certifying practitioner had not seen the infant for 14 days and therefore reported the case to the coroner, who decided to hold an inquest, at which all the facts of the case were fully disclosed, including a statement by the dispensary authorities that it was a usual practice, when a medical officer intended to be absent, for him to leave forms signed in blank for use during his absence. On the case being reported to the Registrar-General he instructed the Leeds superintendent registrar to prosecute both the medical practitioners concerned in this case for contravening Section 40 of the Births and Deaths Registration Act in making and giving a false certificate of the cause of death of the infant referred to. The certificate was false because it purported to be the certificate of one practitioner, whereas the practitioner whose signature it bore had not really certified the cause of death. At the adjourned hearing of the case on May 15th before the Leeds stipendiary magistrate the counsel for the defence advised his clients to plead guilty, pointing out, however, that in the course they adopted they were only conforming to the usual custom when a house surgeon was temporarily absent from the dispensary. The prosecuting solicitor, while pressing for a decision in the public interest of correct death certification, disclaimed any desire on the part of the Registrar-General for heavy penalties. The stipendiary magistrate

pointed out that the defendants had no improper motives in making or giving this false certificate, but considered that the case had very properly been brought before the court, especially as the practice of signing certificates in blank had been admitted, and also expressed the opinion that the Registrar-General deserved the thanks of the public for instituting the prosecution. Having regard to all the facts of the case the magistrate decided to fine the practitioner who signed the blank certificate £2, and the practitioner who filled in the cause of death without having seen the infant £1, "the amount of the penalties being payable as the costs of the prosecution." The grave danger from many points of view of signing blank forms for medical certificates under any circumstances whatever induces us to subscribe to the stipendiary's views, though we are sure that the medical men acted in perfect good faith.

NEW HILL STATIONS FOR INDIA.

IN his extremely interesting, but unhappily posthumous, work, Eighteen Years in the Khyber,[1] Sir Robert Warburton mentions several elevated sites in the vicinity of the celebrated pass which in his opinion could with advantage be made use of as hill stations. The first of these, which is known locally as Tor Sappar, is situated due north of Landi Kotal, 32 miles to the westward of Peshawar, at an altitude ranging between 5300 and 5600 feet above the level of the sea, and is tersely described by the author as "A natural hill-fortress, capable of holding 1500 soldiers (Europeans)." The rainfall is insignificant, being "limited to five or six showers," so the plateau is "free from the three to three and a half months of incessant mist, fog, rain, thunder, and lightning, which are the normal characteristics of the Himalaya hill stations from the middle of June to the end of September." This freedom from dampness must be a very great boon, as anyone who has experienced the discomfort of a rainy season at the Himalayan sanatoria will admit, and since, owing to the prevailing breezes which in one direction blow over the Canbul river and in another across the moist delta of the Doaba, the place enjoys an almost complete immunity from the hot dry winds that elsewhere are so trying its meteorological advantages should suffice to attract visitors from India who are in search of a moderate temperature under an unclouded sky. Being well acquainted with the principal Indian health resorts Colonel Warburton was in a position to judge, and has recorded his deliberate opinion that in spite of its slight inferiority in the matter of altitude, Tor Sappar as regards climate is far superior to Murree, Dalhousie, Simla, Mussoorie, or Landour. "Lying far away from Mohmands and Afridis, there was no reason," he adds, "why we should not have made a hill station of this spot, which is inestimably superior to Cherat in every way—in climate, in extent, in its superior water-supply, and in its safety from lurking thieves. And, what was more to the point ..... the place had no owner." The next elevated site eulogised by Colonel Warburton is the Dabrai hill, which is distant about a day's journey from Tor Sappar. Here "2000 Europeans could be well and safely located for the summer months"; and close by, in the neighbourhood of Lwara Miana, there are several places capable in the aggregate of accommodating "2000 Europeans or even more ..... with abundance of water." The Khyber district, as a rule, is very bare and barren owing to the lack of water, or rather to the lack of means for storing and regulating the supply. The precious fluid does exist, but for most part it is allowed to run to waste without any attempt to retain it in tanks or to direct its course. That it is not the soil which is blamable for the scarcity of vegetation is evident from the following description of a halting-place near Dabrai: "What a change as we penetrated the gorge for some distance! The hillsides were perfectly green with grass and very large trees imported from Hindustan, for they did not belong to the Khyber Range, abounded, showing that once upon a time some resident of these hills had made a good garden in this sheltered locality. And what was of even greater interest a splendid spring giving 100,000 gallons of water daily gushed out of the mountain side." When Colonel Warburton left Peshawar for England in May, 1897, "the horizon of Khyber politics was unclouded and bright." Then came the "Khyber *Débâcle*"; but although "ready and most anxious" to resume his post the "Warden of the Khyber" was not recalled until it was too late. The concluding sentences of an unsigned introductory notice to this remarkable book convey a moral as sad as it is pathetic: "The hard work of the Tirah campaign which followed, the exposure and fatigue, coupled with unceasing attacks of dysentery, may be said to have undermined his bodily strength and finally to have caused his death—but the loss of the Khyber after his faithful guardianship of so many years preyed most heavily upon his mind. It is no exaggeration to say that it broke his heart." In a letter to a friend written shortly before his death Colonel Warburton said: "My mind is very heavy over this hideous disaster, which I feel could have been staved off even up to the day of mischief. It makes me quite sad to think how easily the labour of years—of a lifetime—can be ruined and destroyed in a few days."

[1] John Murray, Albemarle-street, London, 1900.

ASSURED PENSIONS FOR ASYLUM WORKERS.

IN a recent leading article we referred to an unfortunate omission in the Lunacy Bill for 1900, this Bill containing no provision relating to the superannuation of the officials, attendants, and servants of lunatic asylums. Under the Act of 1890 county councils are empowered to grant pensions, but the exercise of this power is not obligatory and hence, while some authorities have behaved liberally and justly, others have adopted a different course and thus an element of uncertainty attaches to the service which must sooner or later tend to exclude from it those whose ability and industry will ensure for them better treatment in other paths of life. This is not only unfair to the officers but is unfair to the insane. Those who are best able to judge of the absolute necessity of securing good service in the asylums have not failed to express their opinion of the importance of providing an adequate and certain superannuation allowance for all officials. We have now received an "Open Letter to Members of Parliament and Others," signed by "A Medical Officer," in which the case of asylum officials in respect to pensions is fairly stated and which urges the need for the Government to deal with the subject by legislation. With this letter is a memorandum prepared by the executive committee of the Asylum Workers' Association which comprises upwards of 3000 persons. The nature of the duties performed by those in attendance on the insane is properly discussed and it is pointed out that the wear and tear and the strain of life in an asylum make the provision of pensions very necessary to those engaged in this arduous work and that after 50 years of age men and women become gradually unfitted for these duties. The Bill of 1898 proposed to provide a remedy for the uncertainty attaching to the administration of the superannuation section of the Act of 1890 by making the granting of pensions obligatory. The Bill of the present year, owing apparently to the opposition of county councils, does not contain this provision and hence the uncertainty as to their future, which is so trying to officers in a public service, will continue. We hope that it is not too late for the

Government to remedy this defect in the present Bill. This is precisely a subject in which a Government might properly insist upon having its own way. The word "Government" is, however, unfortunately coming to have a meaning very different from that of former times. Not many years ago the Government used to govern; now, with an enormous majority—in fact, without any organised opposition in Parliament—it hesitates to enforce its will. We would gladly see this matter dealt with firmly, for it is imperative that the service which takes charge of the insane should be well maintained.

LES MAITRES DE L'HYGIENE.

DR. VALLIN, the editor of the *Revue d'Hygiène et de Police Sanitaire*, is at the present time performing a useful work in the pages of that journal by publishing month by month a biographical sketch of the leading epidemiologists of the day. The series commenced in February with a notice of Professor Koch and was followed in March by an article devoted to Professor Pettenkoffer, while the April number contains an interesting account of Mr. William Henry Power, F.R.S., the recently appointed Medical Officer of the Local Government Board. This last-named contribution bears testimony to the far-reaching effect of Mr. Power's researches, of many of which it treats in detail, and it is evident that Dr. Vallin has acquired a very correct estimate of the subject of his notice. All these biographical notices convey to the reader a good idea of the work with which the names of the authors have been and will be associated, and it is useful to have these summaries during the lifetime of the workers themselves rather than to wait for the information until their obituaries appear.

TIC DOULOUREUX AND ITS TREATMENT BY RESECTION OF THE AFFECTED NERVES.

Professor W. W. Keen and Professor William G. Spiller of Philadelphia report in the *Journal of the American Medical Association*, April 28th, 1900, cases of resection of the fifth nerve with an account of the microscopic examination of the portions of the nerves removed, thus throwing an interesting light on the pathology of trigeminal neuralgia and tic douloureux. The following two out of the three cases may be regarded as typical for what they teach. Case 1.—A married woman, aged 53 years, of healthy condition, the mother of 11 children, six of whom were living and well, had suffered in October, 1894, from tingling sensations and pain felt at first at the internal angle of the right eye and subsequently spreading to and involving the entire right face and the anterior part of the scalp. She had to sit up as lying down increased the pain very much. In 1895 and 1896 she improved and had scarcely any pain after this till on Feb. 4th, 1898, it suddenly recommenced and had persisted since. Along with the pain there were spasmodic twitchings of the muscles about the right eye and on the face, which continued as long as the pain lasted. On March 3rd, 1898, Dr. Keen removed the supra-orbital and infra-orbital nerves, the latter by the orbital route, the nerve being divided towards the apex of the orbit. She improved after the operation and was free from pain for 11 months after. She then had a slight recurrence of local pain with an attack of influenza, which, however, was slight and eventually disappeared. Case 2.—A married woman, aged 62 years, who 20 years previously had suffered from uterine myoma with serious hæmorrhages and during the last 10 years also from hæmorrhoids, became the subject of a sudden partial palsy of the left side 10 or 15 years ago without assignable cause and recovered from the same under treatment. For some time she suffered from slight febrile elevation of temperature towards evenings and three years ago without assignable cause she began to have excessive pain in the groove between the nose and the right cheek. This gradually increased and extended over the whole of the cheek, the lower jaw, and the right ear. The pain was the characteristic one of tic douloureux and was caused by eating, conversation, &c. The patient was at first treated with strychnine, $\frac{1}{30}$th of a grain three times a day, and the doses were gradually increased without obtaining relief, whereas the excitability of the spinal cord was augmented and gave rise to discomfort in walking, stooping, &c. This medicine was discontinued and resection of the infra-orbital nerve was performed on Dec. 31st, 1898. The lower jaw was then trephined and about two inches of the inferior dental nerve, including its mental and incisor branches, were removed. She made a typical smooth recovery and went home on Jan. 13th, 1899, two weeks after the operation. Occasionally since then when suffering from severe colds she has had mild but transient attacks of pain. Microscopical examination of the nerves by Dr. Spiller showed degeneration of the medullary sheaths in the form of minute balls stained black by osmic acid. Sections stained with carmine and Delafield's hæmatoxylin showed more or less round-celled infiltration around the small blood-vessels. Many axis-cylinders appeared swollen and degenerating. Attention is drawn to the curious clinical fact that the right facial nerve is more commonly attacked.

THE ANNUAL DINNER OF THE SANITARY INSTITUTE.

THE annual dinner of the Sanitary Institute was held on Friday evening, May 11th, His Royal Highness, the Duke of Cambridge, President of the Institute, being in the chair. The Bishop of London, in proposing the toast of "The Army," referred to Dr. E. A. Parkes and the service he had rendered to army hygiene. Surgeon-General Jameson, C.B., Director-General, A.M.S., said that the present war had severely tested the Army Medical Department, but that department had proved equal to the strain. The St. John Ambulance Association had been of great assistance and had provided a large number of men. Lord Stamford, in replying for the House of Lords, called attention to the Cleansing of Persons Act which was working with good effect in Marylebone. Mr. T. W. Russell spoke of the urgent and important question now before the country with regard to the housing of the working classes. He believed that it would be one of the most important questions upon which the general election would be fought and it would claim the careful consideration of the new Parliament. The Duke of Cambridge, in proposing the toast of "The Sanitary Institute," said that the Council were fully alive to the importance of the question of the housing of the working classes and had arranged a conference on the subject to be held at the end of July. Delegates from the various urban sanitary authorities would be invited to attend the conference and in connexion with it an exhibition of plans and models of various forms of dwellings would be arranged. He stated that the Institute now numbered 2400 members and associates and was progressing in all departments of its work. Professor Corfield, in reply, referred to the new examinations which the Institute had established during the year for inspectors of meat and other foods and in practical hygiene for school teachers and said that the Council were now extending their work by establishing examinations in Sydney. It had also been decided to hold at the beginning of August one or two conferences in Paris. Among those present were the Bishop of London, the Earl of Stamford, Rear-Admiral FitzGeorge, Sir Joseph Fayrer, Sir Francis Sharp Powell, Sir William Preece, Mr. T. W. Russell, M.P. Mr. Dickinson (Chairman of the London

County Council), the President of the Royal Institute of British Architects, the President of the Surveyors' Institution, the President of the Incorporated Society of Medical Officers of Health, the Master of the Butchers' Company, Mr. Shirley Murphy, Dr. B. A. Whitelegge, the Venerable Archdeacon Stevens, and Professor J. Lane Notter.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MR. C. H. GOLDING-BIRD, one of the surgeons to Guy's Hospital, will be a candidate at the election to be held in July for one of the vacant seats on the Council of the Royal College of Surgeons of England. Mr. H. H. Clutton, Senior Surgeon of St. Thomas's Hospital, will also seek election on the Council. We have already announced the names of Mr. J. H. Morgan and Mr. J. Bland-Sutton as candidates.

THE CASE OF ELIZABETH GIBBONS.

IT has been announced that the Home Secretary has ordered the release of Elizabeth Gibbons who in 1884 was sentenced to death for the murder of her husband. The recurrence of her name in the daily press reminds us that in commenting on her trial while she lay under sentence of death we wrote of her,[1] "The prisoner in this case must be respited," and that, taking a course unusual to us, we caused a petition to lie in our office for signature praying that the clemency of the Crown might be exercised in her behalf. The reason for our doing this, as we set out in the article referred to, was that the evidence which convicted her was that of the medical witnesses who drew conclusions from the number and position of the wounds received by the deceased which failed entirely to convince us, while we attached weight to evidence which seemed to justify the theory of suicide set up by the defence. The prisoner and her husband had lived together for 37 years when one night he was found dead with four bullet-wounds inflicted by a revolver which he always kept in his bedroom. No one had been present with him but his wife when the fatal shots were fired. Her story was that he had fired the shots himself while she had tried to prevent him, but the evidence of a surgeon practising at Hayes, where the deceased lived, was very strongly to the effect that it was impossible that the wounds, speaking of them collectively, could have been inflicted one after the other by any man upon himself, and that one of them, at the back of the shoulder, could not have been self-inflicted at all. With regard to this last wound it was suggested in cross-examination that it might have been caused by the deceased falling on the pistol, which was discharged thereby, but the witness and Mr. A. A. Bowlby, then medical registrar at St. Bartholomew's Hospital, who corroborated his evidence, would hardly admit that there was a possibility of such a wound being so occasioned. We neither make nor made any protestation of the innocence of Elizabeth Gibbons, but we were and are of opinion that such evidence as was given by the medical men, coupled with no other evidence save what is known as circumstantial evidence, was not sufficient to prove beyond all shadow of reasonable doubt that she had been guilty of the crime, bearing in mind that the crime of murder involves a sentence which once executed cannot be recalled. It was admitted, we believe, when Gibbons's sentence was commuted to one of penal servitude for life, that THE LANCET had been the chief agent in saving her from the gallows. She entered prison 16 years ago at the age of 54, she leaves it consequently at the age of 70, and during her incarceration a great change has been wrought in the procedure at criminal trials. While the agitation for her reprieve was proceeding a gentleman named Wetherfield pointed out in a letter to the *Times*[2] that "could the woman have been asked by a judge, as she would have been in France, how these wounds happened she would either have convicted herself or explained the whole thing. ..... In fairness prisoners ought to give evidence on oath, subject to cross-examination." This they can now do. It is a matter of passing comment that among those whose opinions were adverse to the recent Act of Parliament which enables them to do so was Mr. Justice Hawkins (now Lord Brampton) who tried Elizabeth Gibbons; it is a matter for congratulation to medical men that the weight of responsibility involved in giving evidence in such a case as hers is by this Act considerably lightened, as the prisoner has now, at any rate, the opportunity of stating as a witness that which actually took place and of being cross-examined upon his or her story in order to test whether he or she ha stated it truly.

[1] THE LANCET, Dec. 27th, 1884, p. 1163.

[2] The Times, Dec. 22nd, 1884, p. 10.

THE ANNUAL CONVERSAZIONE OF THE MEDICAL SOCIETY OF LONDON.

THE annual conversazione of this society was held on May 21st, a reception being held by the President, Dr. F. T. Roberts, at 8.30 P.M., when Dr. J. Kingston Fowler delivered an oration on Science and Medicine in the Eighteenth Century, which was listened to with much attention. Sir William Gairdner, in proposing a vote of thanks to Dr. Fowler, remarked that he had himself been interested in the history of medicine in the eighteenth century and he had given an address on the subject in 1887. It was interesting to compare Cullen and Brown, both of whom had systems. Cullen was a very learned and a very practically minded man, but his system was replaced by the Brunonian system. Brown was a man of very different stamp, not refined, not of large practice, not a hospital physician, yet, strange to say, he erected a system which overthrew that of Cullen. Putting it epigrammatically the eighteenth century was a century of revolution, the nineteenth was a century of evolution. Music and tobacco assisted the members to pass a very pleasant evening.

MR. H. M. O'HARA AND THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

OUR correspondent in Australia tells a painful story of alleged breach of professional ethics committed by Mr. H. M. O'Hara, a Melbourne surgeon. Mr. O'Hara was asked by the Council of the Victorian Branch of the British Medical Association to explain to what extent, if any, he was connected with a company selling a powder and a syringe to be used in preventing conception. Mr. O'Hara made an explanation which in the opinion of the Council did not acquit him of grossly unprofessional conduct and notice of motion for his expulsion from the Branch was given. The Council arrived at their decision by the necessary three-fourths majority, but when their action came up for confirmation at the next ordinary meeting of the Branch 44 members voted for Mr. O'Hara's expulsion and 34 against it, so that the three-quarters majority of the Branch meeting necessary for the ratification of the Council's view was not obtained. The President of the Branch and the Council, regarding the act of the Branch in not endorsing their decision as tantamount to a vote of want of confidence, tendered their resignation as members of the Branch, and, according to our correspondent, intend to send to the headquarters of the Association in England a justification of the course which they have pursued. The matter, our correspondent suggests, may be re-opened in England. It is one that should be gone into minutely and

impartially and to transfer the *venue* of the investigation from Melbourne to London will not be without obvious advantages, although to do so may cause additional trouble in the procuring of evidence. On the one hand, for a medical man to be mixed up, however indirectly, in a company having for its object the sale of contraceptives constitutes a breach of professional ethics so complete that removal from the roll of the profession rather than expulsion from the local branch of the British Medical Association should follow upon proof of the misconduct. But on the other hand the accusation is so disgusting that extraordinary pains should be taken to prove that it is well founded and that the accused man has been a wilful sinner and not a victim to misrepresentation before any punitive measures are taken. Evidently the Council believe that they took all possible precautions against error, but equally evidently a certain proportion of the Victorian Branch of the British Medical Association considered Mr. O'Hara to have a defence. For his sake, as well as for the cause of that professional good behaviour which the Council have desired to champion boldly, the matter should be thoroughly threshed out.

THE NEW CORONER FOR SWANSEA.

IN consequence of the resignation of the borough coroner, Mr. Edward Strick, the Swansea County Council were called upon last week to elect his successor. Mr. Strick was a solicitor of long standing in South Wales, and every effort was made upon the part of his colleagues in the profession to secure the office for one of themselves. The medical men in the town on their part considered that the position could be filled with more advantage to the public by a medical practitioner. In the columns of the local press during the past few weeks various arguments have appeared from the advocates of each party, and resolutions were addressed to the council from the Swansea Medical Society and from the local Incorporated Law Society. Among the five candidates whose applications were received by the council were two medical men—Mr. J. A. Rawlings, who has been a member of the council for many years, and Mr. John Evans. The three solicitors included Mr. Leeder, an alderman of the council. The contest appears to have really been between this gentleman and Mr. Rawlings and Mr. Evans and an examination of the preliminary voting almost points to the conclusion that a majority of the members of the council were favourable to the appointment of a medical man rather than of a solicitor, though in the final voting there were 19 votes cast for Mr. Leeder and 15 for Mr. Evans. If our surmise is correct it seems a pity that one of the medical candidates should not have withdrawn by lot or otherwise in favour of the other, for there should be no doubt as to the desirability of a medical man holding the post of coroner.

"TYPHOID SPINE."

IN the *Boston Medical and Surgical Journal* Dr. R. W. Lovett and Dr. C. F. Withington have recently published a case of a rare complication of typhoid fever to which the name of "typhoid spine" has been given. Only nine cases have been recorded, and a difference of opinion exists as to the nature of the condition in question. According to some, including Osler, it is a neurosis; according to others—Gibney and Quincke—it is a spondylitis or perispondylitis. The present case is important because it is the only well-authenticated one accompanied by deformity and therefore the only one in which spinal inflammation is proved to have been present. An army surgeon, aged 35 years, who was engaged in the Cuban war, became ill on July 17th, 1898. He had continued fever for two weeks and intermittent fever for two weeks more. He returned home and rapidly gained strength. About Sept. 25th he began to notice lameness in the lumbar region. On Oct. 6th, after getting very tired, he was seized with cramps in the same region, and they became so severe that morphia had to be injected. He kept his bed for three days, after which he quickly improved and began medical practice. He remained well until Nov. 26th, when he had a slight chill. On the next day the cramps in the back returned and grew worse. He kept his bed until Dec. 3rd, when he was removed to hospital. On admission his temperature was normal. He complained of severe lumbar pain which came on in spasms and which was much aggravated on his getting out of bed. Morphia had to be given. The blood gave the typhoid reaction and no plasmodia were found. During January, 1899, all movements of the body were very painful. The spines of the lower dorsal and upper lumbar vertebræ were tender and the muscles of the loin were rigid. In February he could walk slowly with the help of a cane. A distinct projection of the spines of the eleventh and twelfth dorsal and first lumbar vertebræ was observed. A plaster jacket was applied, but it gave less relief than is usual in Pott's disease. The temperature did not exceed 99·6° F. during the first two weeks of his residence in hospital. About Dec. 17th, 1898, it became more febrile, ranging from 100° to 102° for 25 days, and then becoming like that of the first two weeks. Improvement was slow. In October, 1899, the deformity still persisted and the patient wore a leather jacket on account of it. He was free from pain and the spinal movements were about two-thirds of normal. In November he was engaged in active practice and could lay aside the jacket for two or three hours. Dr. Lovett and Dr. Withington exclude tuberculosis on the ground that the clinical features were not those of ordinary Pott's disease; the muscular rigidity seemed largely voluntary, pain was excessive, and good mobility was recovered in nine months. Moreover, the tuberculin test gave a negative result. Only destructive osteomyelitis of the vertebral bodies could explain the spinal projection. Inflammation of bone in other parts of the body is now a well-recognised sequel of typhoid fever. In one recorded case of typhoid spine periostitis of the parietal bone, which had undergone resolution, preceded the spinal lesion. Strain seems to be an exciting cause. In one case the patient used to climb stairs with a pedlar's pack, in two cases the patients had resumed their occupations—those of blacksmiths, and in another case the symptoms began after a fall while skating. In THE LANCET of Oct. 29th, 1898, at page 1147, another case is described.

THE SPECIAL RULES RELATING TO LEAD POISONING.

BY a Parliamentary return recently issued it is obvious that the special rules relating to the china and other trades in which lead compounds are used are diminishing the number of cases of lead poisoning. In THE LANCET of May 19th we printed the reply of the Home Secretary to a question put by Mr. Coghill upon this subject. Sir Matthew White Ridley ordered a return to be printed giving the number of cases of lead poisoning reported as occurring: (1) in the earthenware and china industry for each month from January, 1898, to March, 1900, both inclusive; and (2) in all other trades. We have received a copy of this return and the figures are very striking in showing that the diminution in the number of cases of lead poisoning follows closely on the establishment of the new rules in 1898. It may be safely anticipated that in those departments of the pottery trade in which lead may be dispensed with altogether or employed in the form of a frit some of the rules need not be applied. We pointed out long ago that the withdrawal of certain of the stringent regulations on the condition that leadless glazes only should be used would be a powerful inducement to the trade to turn

their attention to this aspect of the problem. We have taken a very keen interest all along in the question of substituting for raw lead leadless glazes or harmless lead glazes known as "frits," and it is a source of considerable satisfaction to ourselves that at length it has been found that lead can be done away with altogether, or at least used in a non-poisonous form without interfering with the interests of the trade. In THE LANCET of Jan. 7th, 1899. THE LANCET Analytical Commission on ome Leadless Glazes wrote that "it may be hoped that the day is not far distant when the Government will be in a position to demand the abolition of raw lead in glazing and to compel the adoption of safe frits, or, better still, leadless glazes, without inflicting any hardship on the potter or causing any hindrance to the pursuit of his art." Again, in THE LANCET of April 1st, 1899, we submitted that the Government had been placed in this position by the results embodied in a Government report—results which completely confirmed our own views—obtained at the instance of the Home Office by Dr Thomas Oliver and Professor Thorpe. We may now look with hopefulness in the future for a further diminution in the number of cases of lead poisoning, for most of the leading representatives of the trade have found not only frits practicable but leadless glazes also.

THE DESTRUCTION OF DISEASED FOOD-STUFFS.

THE forty-seventh section of the Public Health (London) Act, 1891, enables a medical officer of health or sanitary inspector in the metropolis to enter any premises and examine animals or articles intended for the food of man, and if he find them unfit for the food of man to seize them in order to have them dealt with by a justice, while the same section ordains that the justice, if it appears to him that that which has been brought before him is unfit for the food of man, shall order it to be so destroyed or disposed of as to prevent it from being exposed for sale or used for the food of man. The proceedings necessary for punishing the person exposing the stuff for sale are to be taken independently of those above referred to although they may come before the same magistrate. An appeal recently heard by the Divisional Court under this section seems at first sight a little belated considering that it concerned the refusal of the magistrate sitting at the Thames Police-court to order the destruction of certain diseased strawberries in last June, but in the result it should do good as it makes clear a point that can hardly be said to have been extremely obscure before, and as the case appealed on was remitted to the magistrate, who had decided it wrongly, with an intimation that the strawberries ought to have been condemned. It seems that they had been sent by the defendant to Messrs. John Moir, Limited, who had promptly rejected them as unfit for use, and that they had been seized by the sanitary inspector at some stage of their unwholesome existence subsequently to this. This being the case the learned magistrate decided that he had no evidence before him that the strawberries were intended—that is, that they were still intended—for sale for human food, the intention so to dispose of them having been exhausted when Messrs. Moir rejected them, and he accordingly refused to order their destruction. This very dangerous decision has fortunately been overruled. We say fortunately because it might have turned out that the section of the Act was so drawn that food-stuff might in such circumstances be indefinitely preserved to constitute a temptation to its possessors and a danger to the public. Acts of Parliament are not always as lucid as they might be, and in deciding an appeal as to the interpretation of the section of the general Public Health Act of 1875, which the section in the London Act under discussion almost exactly follows, Mr. Justice Field, now Lord Field, called its drafting "inartificial." His decision, however, in that case, coupled with an earlier one in which also he was a member of the court, together with Thomas v. Van Os, heard on May 17th, by Mr. Justice Ridley and Mr. Justice Bigham, should leave no doubt in the mind of any magistrate that it has been the intention of the legislature to provide for the prompt destruction of food stuffs unfit for human consumption, leaving such unfitness the sole point for the justice's decision, unhampered by any question of the intentions, innocent or otherwise, of the owner, or of any other matter which may serve as a defence to him when he personally is brought before the magistrate; while the question of the exposure for sale is, as far as these proceedings are concerned, a question for the medical officer of health or sanitary inspector, upon which he satisfies himself before he seizes the stuff and applies for the order for its destruction.

THE ATTENDANCE ON JUVENILES AND WOMEN BY CONTRACT.

THE Wigan and District Medical Guild has had under consideration for some time the attendance on juveniles and women at contract rates, and at a well-attended meeting on Thursday evening, May 17th, a motion was carried without much opposition that they should not be attended by contract. The rate of remuneration and the collecting of the payments, with more or less risk of canvassing taking place, together with the increased expenses in working practices and the difficulty of getting good assistants, were all used as arguments against continuing the contract system. The Wigan and District Medical Guild was established about three years ago and certainly has justified its existence. One of its first acts was to refuse to attend sick and accident cases for the same annual fee, the present fee of 2*s.* 6*d.* per head per annum being too low even for sickness. Then an increase in the rate of payment for attendance on women and a minimum midwifery fee was fixed. On the whole the members have worked well together and supported one another and the meetings have done much to create a good fellow-feeling. How this last resolution will be supported remains to be seen. A few of the members in the first instance will be hardly hit by the change and one firm will lose what is already a medical aid association in reality although termed a "Juvenile Order of Druids." This association, which has grown up from a small beginning, now employs a number of collectors, eight or ten being able to make a living out of their commission, the medical officers for Wigan and an adjoining district receiving £500 and more per annum. The society is not registered, but is worked by a committee of about 30 members, and is therefore a commercial speculation. It remains, therefore, to be seen what will become of this huge club of women and children, while it is interesting to note that it was discovered lately that there were about 70 adults paying the lower rates as juveniles. The medical men are sufficiently organised to carry out their resolution unless outside help comes to the aid of the clubs. If this should unfortunately come about it is proposed to see what help, if any, the General Medical Council will render to those who are refusing to lend themselves to a system which can be termed "sweating." No one will agree that 2*s.* per head per annum for medical attendance upon a child is adequate remuneration, no matter in what numbers the patients present themselves, for amongst a juvenile population there is always a disproportionate rate of sickness. The General Medical Council will be asked to make some sort of pronouncement that will prevent other medical men from taking such work upon terms that the Wigan and District

Medical Guild rightly consider inadequate. We shall watch with interest the movement made by the Guild.

INDIAN MEDICAL SERVICE ANNUAL DINNER.

THE annual dinner of the Indian Medical Service will take place at the Hotel Cecil on Thursday, June 14th, at 7.45 P.M., Sir Trevor Lawrence, Bart., in the chair. Officers intending to be present should communicate with the honorary secretary, Mr. P. J. Freyer, 46, Harley-street, W.

LONDON SCHOOL LECTURES ON FIRST AID AND HOME NURSING.

WE are informed that an alteration has been made in the remuneration of the lecturers on first aid and home nursing at the evening continuation schools of the London School Board. The fees have been raised from half a guinea to one guinea per evening, and lecturers on these new terms are being advertised for. The engagements will vary from one evening a fortnight to three or four evenings a week, each lecture with the practical instruction lasting an hour and a half. Applications should be forwarded not later than June 9th on forms which can be obtained from the clerk of the Evening Continuation Committee, School Board for London, Victoria Embankment, W.C.

TREATMENT OF FRACTURES.

IT cannot be said that the usual treatment of fractures of the extremities always gives perfect results, for in a considerable proportion of the cases some stiffness or some impairment of mobility persists which interferes materially with the functional activity of the limb. Attempts to improve on these results have been made along two widely divergent lines. On the one hand, it has been contended that endeavours to immobilise the fragments are harmful, for adhesions of neighbouring structures tend to form and these prevent movement; to overcome this objection early and continued massage of the neighbourhood of the fracture has been much advocated, especially by Lucas-Championnière. On the other hand, it is maintained that the lack of success which has been met with is attributable to a failure to adjust with anything like accuracy the broken portion of the bones and to maintain them in their normal position. Mr. Arbuthnot Lane has for some years insisted on the fact that our ordinary methods of setting a fracture in many cases fail, and since 1896 the evidence afforded by skiagrams has been on the same side. The facility with which in a compound fracture the broken portions of bone can be adjusted and maintained in a correct position has persuaded Mr. Lane to advocate the conversion of a simple into a compound fracture on occasions when any difficulty is experienced in restoring or maintaining the correct position of the fragments, and these views are ably advanced in a clinical lecture which appears in this number of THE LANCET. Of course, with modern antiseptic precautions the risk of cutting down on to a fracture may be reduced to a minimum, but some risk still remains. So the question arises, Is the benefit to be derived from this operation equal to the risk which is run? In some instances the answer must be definitely yes, but these cases form probably only a small proportion of all fractures. For an ordinary simple fracture the usual methods suffice, but the immediate result should be controlled by means of skiagraphy. Great care must be taken in replacing and fixing the bones and after the splints have been applied the employment of the Roentgen rays will demonstrate the position and will inform the surgeon what degree of success has been attained. Should the position of the fragments be unsatisfactory the surgeon must again attempt to replace them in the normal position; if after repeated trials he should not succeed in effecting this then he is surely justified in proceeding to more severe surgical measures.

THE ANNUAL DINNER OF THE WEST LONDON HOSPITAL.

THE annual dinner of the past and present staff and residents of the West London Hospital was held at the Trocadéro Restaurant on Monday, May 21st, under the presidency of Dr. Donald Hood, senior physician to the West London Hospital. The dinner was well attended and was a bright and successful function throughout. After the usual loyal toasts Mr. Keetley, senior surgeon to the West London Hospital, proposed in well-chosen terms "The Imperial Forces." In the regretted absence of the Director-General of the Army Medical Service, Surgeon-General J. B. Hamilton replied, and dwelt in the course of his speech upon the many acts of unrecorded heroism that have been done by the members of the Royal Army Medical Corps during the war. In particular he spoke of the services rendered to the sick and wounded by a totally inadequate handful of medical officers during the long beleaguerment of Ladysmith, and expressed wonder that no mention of their services had appeared in despatches. The chairman in proposing the toast of the evening—viz., "The West London Hospital"—recalled the changes for the better which that institution had experienced since his own connexion with it. When he was first appointed to the hospital almost everything that in modern ideas goes to make a hospital was wanting. Now a large and competent staff, working hand-in-hand with the practitioners of the neighbourhood, ministered in a great building with newly erected wards and out-patient departments to the wants of the sick poor of a vast district. He concluded by reviewing the position of the general practitioner of the present day and indicating its hardships, and by alluding to the good work done by the West London Post-Graduate College. Mr. F. H. Lewis and Mr. W. McAdam Eccles replied, representing the committee of management and the medical staff of the hospital respectively. Mr. L. A. Bidwell made a statement with regard to the Post-Graduate College, which, he pointed out, was the only institution for qualified men to perfect themselves in their work which had the advantage of being connected with a general hospital. The speeches of the meeting all went to show that the past and present staff and residents of the West London Hospital have reason to be proud of their connexion with an institution which has not only done an immense amount of good work, but which intends to progress in well-doing.

REPORT OF THE ARMY VETERINARY DEPARTMENT.

THE report of the health of the animals under the care of the Army Veterinary Department during the year ending March 31st, 1899, is a satisfactory one. In the United Kingdom there were 14,305 troop horses, 115 mules, and 1915 chargers on March 31st, as compared with 13,828 troop horses, 135 mules, and 1845 chargers in the previous year. The amount of inefficiency from diseases and injuries was 0·59 per cent. less than last year; the number of deaths was 2·70 per cent. of the average strength. The mortality was highest in the months of September, August, June, and December. Of the animals treated for various diseases it was observed, as is usually found to be the case, that there was a greater percentage of illnesses in animals under five years of age. In Egypt glanders made its appearance amongst the horses and mules, being introduced by a remount horse purchased in Syria. Ten horses and seven mules had to be destroyed in consequence and arrangements

have now been made whereby all newly-purchased animals are tested with mallein before being placed in the Government stables. The last case occurred on Nov. 23rd and it is satisfactory to note that no fresh outbreak has appeared since. In South Africa horse sickness was made the subject of an investigation by Veterinary-Lieutenant-Colonel J. Matthews, with the result that certain conclusions were arrived at and detailed instructions issued to prevent its ravages. In Natal 253 animals had succumbed before Veterinary Lieutenant-Colonel Matthews arrived. No cases of glanders occurred, but many deaths were reported from sand-colic and anthrax, and an outbreak of osteo-porosis amongst the Wynberg mounted infantry seriously affected 49 out of 359 cobs. The percentage of deaths for the year was 17·98, as against 18·64 of last year. In the Army Veterinary School the usual classes for officers and farriers were held, the number of attendances and the examination pass list showing them to be very popular. In the Vaccine Institute lymph was prepared for 76,362 persons, sufficient for 72,892 vaccinations being issued. 11 calves were utilised, the average yield being sufficient for 6942 persons to each calf. Supplies were issued to the home and foreign stations and also to the Royal Navy, the percentages of successful primary vaccinations varying from 70·14 on the foreign stations to 94·44 at home. The report concludes with the usual classified tables of diseases and injuries. Considering the undermanned condition of the department Veterinary-Colonel F. Duck is to be congratulated on the way in which the work has been carried out.

WHAT IS SWEETNESS?

WITH all the enormous advances made in our knowledge of the constitution of matter both physically and chemically we are not yet able to supply the complete answer to such a simple question as why is sugar sweet? The chemistry of sugar gives perhaps a bare hint in the way of explanation, but sweetness is undoubtedly a condition where constitution or structure rather than percentage composition is responsible for a specific physical property. Smell is a related subject and at present we cannot tell what determines the characteristic smell of many familiar substances. The chemical composition of turpentine or oil of roses is identical with that of a good many other essential oils—that is to say, the percentage and kind of elements in these bodies is the same; but no one would maintain for a moment that turpentine or oil of cloves is as pleasant as oil of roses. We are dealing here with a question which most probably relates to the arrangement of the atoms in the molecule. Doubtless a difference in the relative position of atoms determines a great difference in physical character. In other words, the elementary materials are the same, but they are placed, so to speak, in such a way in different bodies having the same composition as to present manifold shapes. A given structure, for example, may contain a certain number of bricks and present an ugly exterior, but the same number of bricks may be contained in another structure which may present an artistic and pleasing appearance. Sugar is not the only substance known to us possessing sweetness, but it is the only known naturally occurring substance which possesses this characteristic. Therefore it is not uncommonly thought that when a substance is sweet it must contain sugar. Such a notion, of course, is quite erroneous. Glycerine is sweet but contains no sugar; saccharin is 500 times sweeter than cane sugar and is a definite chemical substance without a trace of sugar in its composition. It is probable, however, that some analogy exists between the structure of these bodies—that is to say, in the relative position of the atoms, which determines the common property, though in varying degree, of being sweet. It is, at any rate, remarkable that according to the respective formulæ assigned to these bodies by chemists, starting with the body which contains the least number of carbon atoms—namely, glycerine, which contains three atoms—the rest of the substances possessing sweetening power contain exact multiples of this number. Thus grape sugar contains six atoms of carbon, cane sugar 12 atoms of carbon, milk sugar also 12 atoms, malt sugar 12 atoms again, while that intensely sweet substance saccharin contains six atoms of carbon in its main group. Possibly this fact is related to the physical characteristic of sweetness. It is an interesting matter—this question of the relative positions of the atoms deciding physical characters; for two different substances may coincide exactly in composition, one of which is quite harmless while the other is a powerful poison.

MR. VICTOR HORSLEY AND THE MEDICAL ACTS.

WE have received the following letter from the solicitor of Mr. Alabone, which we think better to print in full and on which it is not neces ary for us to make any remark:—

To the Editor of THE LANCET.

Re Alabone.

DEAR SIR,—Your note in the current issue rather seems to aggravate matters and is founded on a misapprehension. Dr. Alabone was not removed from any register or membership "for infamous conduct," as you suggest, but simply and solely for allowing a laudatory article to appear in *Moonshine* respecting himself, his house, his practice, and his avocations. He was illegally (see Partridge *v.* Medical Council) removed from the Medical Register without any inquiry whatever, and the inquiry by the College of Surgeons was only upon the point above named.

I have been thus particular in stating the details that you may clearly understand of what Dr. Alabone complains, and his right to have the grounds of his dispute stated without swerving from the facts at issue. This cannot injure him, but a misrepresentation, wilful or otherwise, might do so.

Yours truly,

B. ALABONE CHEVERTON.

28, Essex-street, Strand, London, W.C., May 22nd, 1900.

THE APPOINTMENT OF COUNTY MEDICAL OFFICERS OF HEALTH.

IT is universally admitted that the appointment of medical officers of health was a frank recognition of the national importance of sanitary science, and it is equally true that the work of these officials has everywhere been followed by a gradual reduction in the death-rate over large areas, by a distinct rise in the prevailing standard of public health, and by an immense improvement in the current methods of dealing with preventable and infectious diseases. In view of the many sanitary questions requiring to be dealt with by county councils the necessity of such bodies having a medical man on their permanent staff seems almost self-evident, but nevertheless not a few county councils look askance at such appointments, and a fresh instance of this short-sighted policy has just come to light in West Suffolk. At a quarterly meeting of the council for that division of the county, held on May 14th, Sir Cuthbert Quilter brought forward a motion to the effect that it was desirable to appoint a medical officer of health for the administrative county, and that it should be referred to the General Purposes Committee to advise the county council as to the terms and conditions of the appointment. In introducing the motion he called attention to the insanitary and unsatisfactory state of many of the houses and cottages in the villages, and also to the condition of the crowded portions of the towns. He had no fault to find with the district medical officers of health, and in fact he did not think that their duties could be more fairly carried out, but they were liable to be placed in a difficult

position by their patients being members of the district councils and owners of property against which they might have to report. There were 12 county councils which had appointed medical officers at salaries ranging from £500 to £800 to devote their whole time to the duties; 12 other counties had appointed officers at small retaining fees to compile reports from those presented by the medical officers of the district councils, and 25 counties had not yet done anything. After the seconding of the motion the next speaker said that the present sanitary Acts were administered by the district councils; he had found that the medical officers under the district councils did their work efficiently; and in his opinion the appointment of a county medical officer of health would be simply a waste of money. Colonel Anderson maintained that there were many arguments in favour of having a county medical officer of health, but when the motion was put to the meeting, at which some 40 members were present, only four voted for it.

ON May 22nd Sir William Walrond moved in the House of Commons that a Select Committee be appointed to consider the question of hospitals being relieved from rates. The motion was agreed to and the committee constituted as follows: Mr. Bonsor, Dr. Farquharson, Mr. Hayes Fisher, Sir Cameron Gull, Sir John Maclure, Mr. M'Crae, Mr. Pickersgill, Mr. Round, Mr. T. W. Russell, Mr. Tomlinson, Mr. Lawson Walton, Mr. Warr, and Sir James Woodhouse. It will be remembered that a deputation on the matter was recently received by Mr. Chaplin—a circumstance upon which we commented in our issue of March 10th.

THE annual dinner of the Association of British Postal Medical Officers will be held in the Whitehall Rooms of the Hotel Métropole, London, on Thursday, June 21st, at 7.30 P.M. The honorary secretary of the association is Dr. Ritchie Giddings, Hillsborough House, Mansfield-road, Nottingham.

A TELEGRAM from the Governor of Mauritius, Sir C. Bruce, to Mr. Chamberlain, received at the Colonial Office on May 18th, states that no cases of bubonic plague for the week ending May 17th have been reported.

DR. BUZZARD has been elected a member of the Council of King's College, London.

THE PLAGUE IN ALEXANDRIA IN 1899.[1]

THE manner in which the infection of plague was introduced into Egypt in the early part of last summer has never been clearly demonstrated and, as has been the case in so many other places where plague has appeared, the closest inquiry has failed to explain how, when, and from where the disease was brought to the country. The earliest cases were believed to have occurred in the first quarter of the year, but it was not until May that the presence of the disease was recognised with certainty, and it was on May 20th that Alexandria was officially declared a plague-infected city. On July 4th the Egyptian Maritime and Quarantine Sanitary Council appointed a commission from among its members to inquire into the origin of the disease. The commission consisted of four members—namely, Dr. Rist of Egypt, M. Asdery of Greece, Dr. Torella of Italy, and Dr. Legrand of France. The Report of the commission, while it does not succeed in explaining how and whence the infection of plague came to Alexandria, has brought together a number of interesting facts in connexion with the epidemic which are deserving of notice. After a brief *avant-propos* the report plunges at once into the midst of things with a clinical description of three cases of the disease. The first is that of a grocer's assistant, a Greek, aged 16 years, who was taken ill on April 2nd and admitted to hospital on the 5th with high fever, delirium, and crural adenitis. He recovered after suppuration and incision of the bubo. The second case is that of another Greek, of the same occupation, aged 22 years, who was apparently taken ill on April 29th and was admitted to hospital on May 2nd. He had the same symptoms as the first, and in this case a suspicion as to the true nature of the disease arose, but a bacteriological examination of the contents of the bubo (on the fifth day of the disease) failed to reveal the presence of the plague bacillus, and the case was therefore not regarded as one of plague. The third case described is that of a Greek boy, aged 13 years, a cigarette-seller. He was taken ill on May 15th and admitted to hospital on the 17th. The symptoms in this case were high fever, delirium, and an enlarged axillary gland. On May 20th cultures made from the contents of the gland were found to contain the plague bacillus and the official announcement was consequently published declaring that plague was in Alexandria.

Upon inquiry it was ascertained that certain cases of a suspicious character had occurred at a considerably earlier date. Some of these proved to be cases of simple or venereal adenitis, but a group of three cases, the symptoms of which are described in detail, presented some distinctly suspicious features. The three cases occurred in members of one family, living in a house on the banks of the Mahmoudieh Canal, the lower story of which was occupied by a dirty Arab *bakal*, or grocer's shop, and by a grain store. The first patient, a child, aged 10 years, fell ill on Jan. 27th and died on Feb. 1st. The second, a man, aged 59 years, fell ill on Feb. 8th and ultimately recovered. The third, a man, aged 19 years, fell ill on Feb. 15th and also recovered. In the first patient there was severe pain in one groin, but it was uncertain whether a bubo developed; in the second a bubo appeared in the right crural region, followed by one in the right inguinal region, both of which suppurated; in the third a bubo, which did not suppurate, developed in the crural region on one side. The members of this family also asserted that some of their neighbours had suffered from attacks of fever, with pain and swelling under the arm, and the commission succeeded in seeing one patient, a child, in whom a cicatrix in the groin remained at the site where a suppurating bubo had been incised.

Upon these facts the commission came to the conclusion that the infection of plague had been present in Alexandria as early as January or February, 1899, and that unrecognised cases of the disease may have occurred between that date and the time of the recognised cases in April and May.

The second chapter of the report deals with the evidence of the infection of rats during the epidemic of plague in Alexandria. The first instance of anything of the kind occurred in a shop on the banks of the Mahmoudieh Canal and therefore in the same quarter of the city as that in which the three cases of suspected plague just described occurred. The shop was one where rags and bones were sold, and on March 10th a barge laden with rags arrived opposite the shop. To make room for the new consignment a quantity of old rags had to be removed from the shop and in doing so a considerable number of dead rats and mice were discovered lying in groups of eight or ten together. Such an occurrence was said to have been unprecedented. The bodies were removed by the Arab employés of the shop, but none of these persons were attacked by the disease. About the same time—that is to say, from March 10th to 23rd—in other shops of the same establishment, a number of rats were seen which, instead of running away when the shops were opened in the morning, allowed themselves to be easily caught by the hand. After March 23rd no rats were to be seen, and it was not until towards the beginning of September that these animals began to be common again. Some cases of plague occurred in this quarter of the city but none among the employés of this establishment.

The second instance of rat mortality occurred in the neighbourhood of the Sailors' and Soldiers' Institute. About the end of March and the beginning of April the director of the institute stated that he had observed an unusual number of rats in and near the building. Every morning he saw about 30 sick or dead animals in the lane which separated his house from the store-rooms of a certain grocery establishment, and it is noteworthy that it was in this establishment

[1] Rapport présenté au Conseil Sanitaire Maritime et Quarentenaire d'Egypte par la Commission chargée de rechercher l'Origine de la Peste Alexandrie en 1899. Alexandrie. 1899.

that the second patient above described (the Greek admitted to hospital on May 2nd) was employed. That patient also stated that some 15 or 20 days before he was taken ill an unusual mortality occurred among the rats in the store-rooms in question, some 10 dead bodies of these animals being found every day. Several dead mice and one dead cat were also found. Nothing of the kind had ever happened before. A similar mortality among rats was observed in some other places—notably in a certain French bazaar—at no great distance from the Sailors' and Soldiers' Institute, but the facts are dwelt on at much less length by the authors of this report. Two cases of plague also occurred in the Moharum Bey police barracks, where 10 days previously a large number of dead rats had been discovered; the two men attacked had helped to remove the dead bodies of the rats.

At certain French mills, situated on the banks of the Mahmoudieh Canal, but at a considerable distance from the part of the city originally infected, two of the employés were attacked with plague on June 7th and June 10th respectively. About the middle of May a large number of dead rats and mice had been found in the granaries in connexion with the mills. The bodies had been swept up and thrown into the furnaces, and after a few days there was a complete disappearance of these animals from the mills. It was suggested that the infection of plague might have been taken to the mills in grain sacks which were carried backwards and forwards between the mills and a retail flour shop supplied by them in the quarter of the city where plague was somewhat widely present in May; but if this was, indeed, the case it is at least remarkable that of a certain number of employés whose special occupation was the cleaning and repair of these sacks not one was attacked by the disease. In closing the discussion on the subject of the infection of rats the authors of the report ascribe to these animals a very considerable share in the spread of plague during the early period of the outbreak in Alexandria; later, when the germ of the disease was more widely diffused, it appeared to be carried in clothes or—though this mode of spread was thought to be of very much rarer occurrence than the others—by direct spread from man to man. In support of the view that rats largely helped in the early diffusion of the disease special stress is laid on the fact that so many of the early cases occurred in persons whose place of occupation or of residence was peculiarly frequented by rats, such as grocery shops, a mill, a house in or near which was a baker's shop, a grain-store, or a *bakal*.

A brief chapter is devoted to a discussion of the questions as to when and where the disease first appeared in the city. Suspicious cases were traced as far back as the month of January, 1899, but it was impossible to assert that the infection had not been present in the city from an even earlier date. The part of the city first affected was believed to have been the Minet-el-Bassal or Gabbari quarter, in the neighbourhood of the mouth of the Mahmoudieh Canal and the Gabbari goods station. The general progress of the disease was from west to east. Attention is also drawn to the remarkable fact that all the early cases, both those officially recognised and those still earlier ones brought to light by subsequent inquiry, were in Europeans, either Maltese or Greeks, and that not one occurred at this time in a native.

In regard to the question as to how the infection of plague was introduced into Alexandria the commission was unable to find any conclusive evidence. The nearest place to Alexandria in which plague had been prevalent was Jeddah, but with the exception of a small number of cases of the disease in the crew of a steamer called the *Mehalla* which arrived in Suez from Jeddah in May, 1898, there was nothing to indicate that the infection had at any time been carried to the Egyptian shores from that port. The Moslem pilgrims returning from the Hedjaz in 1899 were also, so far as could be ascertained, in no way responsible for the introduction of the disease into Alexandria. The fact that so many of the earlier patients were Greeks employed in grocery shops (*épiciers*) gave rise to the suggestion that the Greeks or Jews who provide the pilgrims in Jeddah with articles of food might, some of them, have come to Alexandria and brought the disease with them. But there was nothing to point to such an occurrence, and, moreover, the suggestion failed to explain why the cases occurred in several quarters of the town and among persons who, though of the same occupation, had no relations whatever with each other. The explanation favoured by the authors of the report is that the centres for the sale of comestibles became infected and that the disease was spread from them by persons employed in the sale of such articles and by rats.

The theory that the disease was imported from Bombay either by human beings or by rats is very briefly dismissed. It had been suggested that it might have been brought thence by a man accompanied by three Galician prostitutes, who arrived in Alexandria from Bombay on April 2nd, and after a short stay left for Trieste. But there was nothing whatever to show that they brought the infection with them, and it is pointed out that the disease was almost certainly in the city a considerable time before the date of their arrival. The possibility of the importation of the infection by goods brought from Bombay is also discussed. Every month some 3000 or 4000 sacks of sesame arrive at Alexandria from Bombay; the great majority of other classes of goods from India to Egypt are landed at Port Said and thence trans-shipped to Alexandria. Had the infection been imported by such means to the latter city the persons most likely to have been first attacked would have been the men at the docks who landed the goods, but this, it is pointed out, was not the case.

In closing the report the authors repeat, in the form of six "conclusions," the facts stated above, and they add that in regard to the mode of introduction of the disease into the city they are unable to come to any positive conclusion at all. They are content with saying that the infection may have been brought either from India, the extreme East, or from Arabia, and by means of either (1) an infected person in whom the disease was not diagnosed, or (2) a person with the disease in the stage of incubation, or (3) by contaminated goods, or (4) by clothes or dirty linen, or (5) by rats on board a ship.

THE WAR IN SOUTH AFRICA.

THERE is no longer any doubt about the success of our troops at Mafeking. Colonel—now Major-General—Baden-Powell's heroic garrison have been relieved, to the extreme satisfaction and delight of everybody, after a siege of seven months. Unmistakeable signs of the collapsing power of the Boer forces are becoming more and more evident and the news from the theatre of war is eminently satisfactory, although it is still too early to feel confident that there will be any immediate end of the conflict. Looking back on all that has taken place since the beginning of this war we may well pause and ask ourselves whether, after all, any other nation would have done better, or even done as well, under all the exceptional and difficult circumstances that have presented themselves. The Boers have not succeeded in capturing any one of the three places which they have besieged, while their real strategical objects have been delayed and frustrated. They knew every inch of the country, and moreover they had some six weeks' start in disposing of their forces to the best advantage in a land which, geographically and topographically, was admirably adapted to defensive warfare and to their tactics as well as to the use of all the modern rifled arms and implements of war. There was no general rising in Natal, the Boers did not mass their forces to the south of the Tugela and seize the railway or occupy Pietermaritzburg and Durban, which were most important strategical considerations, at the time when our troops in South Africa were altogether outnumbered by them. That the Boers have throughout exhibited great tactical skill, and that they have shown themselves adepts in the use of ambushes and in effecting their retreat from untenable positions with their guns and stores—all this is undoubted. Not only this country, but every other country, has learned great practical lessons from this war. There is no need to enumerate them, but we may refer to one—namely, the enormous resources which are available in the present day for defensive warfare and the possibility of applying these with the greatest advantage on the north-western frontier of India. But the matters with which we as medical journalists are chiefly concerned are: the revolution which the war has brought about in our surgical knowledge of gunshot wounds, in our methods of treatment, and in all that concerns field hospital administration, transport, army hygiene, and the necessity—to speak generally—for the reorganisation and unification for war purposes of all the medical aids at our disposal.

If there is one thing which this war has brought out more strongly than another it is not only the bravery and gallantry of our troops (regular, colonial, and volunteer alike), but the heroism, coolness, and fearlessness of our medical officers and their resourcefulness. It stands to reason that they may not all be equally able, but whatever be the individual differences—and such differences there must be—they seem to be all very much alike in respect of courage; they are keen to seize any opportunity, regardless of consequences, to render the promptest possible aid to the wounded during an engagement. There are other qualities, however, required on field service besides courage and the medical service has not been lacking, we are proud to say, in the display of these. The *Times* correspondent, writing about the investment of the camp at Wepener, called attention to the resourcefulness and zeal of the medical staff. The chief medical officer, Surgeon-Major Faskally, was ill-supplied with medical stores, but he and his officers, "Surgeon-Captains Hudson, Pierce, Grey, Perkins, and Carter, worked like Trojans, obtained all available medical stores, requisitioned a large house of Mr. J. Robertson, and speedily fitted it up as a hospital." It would be impossible, the correspondent adds, to do adequate justice to their work. With few appliances, almost an entire lack of hospital equipment, a very small stock of necessaries, and even of medical comforts, a house as a hospital situated in a most dangerous position, with wounded men on the floors, in the passages, on verandahs, and in tents, and with but a small staff of attendants and cooks, the wounded, well over 100 in number, were treated with skill, tenderness, and consideration, were well fed and nursed, and in some wonderful cases were kept alive. One case, though not quite unique in the history of this war, deserves notice, that of a man who was shot with a Mauser bullet through the forehead, the bullet having emerged in the middle line behind the head. After eight days the man was not only sensible but improving in strength daily and promised a speedy recovery.

When speaking of the courage and gallantry displayed by the troops and medical officers in South Africa we must not forget to mention the fearless devotion of the Indian and native dhoolie bearers. The services rendered by these men do not stand out prominently in the public eye, but, for all that, they are deserving of the highest commendation and we earnestly trust that when they return to India they will be well, nay handsomely, rewarded by something more tangible than praise, for they richly deserve i .

There was a big gathering at the Royal Medical and Chirurgical Society on Tuesday evening last to listen to addresses by Mr. Clinton Dent and Sir William MacCormac dealing with their surgical and other experiences in South Africa. It is needless to say that the proceedings excited great interest and that what was said was well received and listened to with great attention. Mr. Dent's paper not only went into a number of practical details of an instructive nature, but was accompanied by an interesting summary of suggestive observations and comments. Sir William MacCormac's presence excited some well-merited expressions of enthusiasm. His excellent and practical address is published at length in the present number of THE LANCET.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

We have now settled down to routine work and because we are very busy time flies with wonderful rapidity. Our last medical officer, Barklay Black, who joins us from New Zealand, has arrived since I wrote my previous letter. The strength of our medical staff is therefore now 19, including Colonel A. T. Sloggett, R.A.M.C., but as three of the staff are specialists—namely, Mr. J. F. Hall-Edwards (who is in charge of the x rays), Mr. L. V. Cargill (the ophthalmologist), and Mr. F. Newland-Pedley (the dental surgeon), and as Colonel Sloggett's time is entirely taken up by army matters, it leaves us only 15 effective medical officers, which is five below the strength of an ordinary military base hospital. It is true that we have 10 senior medical students, but on the other hand we have a considerable deficiency of orderlies as compared with the military hospitals—a deficiency which is not made up for by our 20 extra nurses. Our 520 beds are now open, but it will not be long before we shall have to increase this accommodation to 750 or more, and that number of beds will tax considerably the capabilities of our comparatively small staff.

During the past week we have had many operations for the removal of bullets in various parts of the body and the operating theatre is completely satisfactory. This climate seems to suit the patients admirably and they mostly do very well. We make a point of having open-air smoking concerts as often as possible for they are very much appreciated by all. The large contingent of Guy's men are very active at them and some are good performers. There is a little music with piano practice every night at the officers' mess.

H.R.H. the Prince of Wales's flags arrived a fortnight ago, but we have only just succeeded in getting poles sufficiently high to display them properly. They are an attractive combination of his Royal Highness's racing colours with a red cross in the centre on a white ground and, together with the flags of the Red Cross Society with an all white ground, which fly from other parts of the hospital, make our decorations effective.

Douché, the French cook who came out to look after the culinary needs of the patients, evolves the most excellent soups, stews, and puddings out of very unpromising materials. It is perfectly extraordinary the amount of food those who are not on special diets get through in this climate. All our kitchen equipment has not yet arrived, and our admirable cook still has to do his work among the karoo bushes and boulders for the permanent kitchen is at present occupied by beds. However, nothing daunts him and he emerges smiling from thunderstorms and does not seem to mind having to make his soups and so on in galvanised zinc baths.

We cannot get any beer from the Army Medical Service Corps now, for their entire attention is devoted to the revictualling of Bloemfontein, so that the generous supplies of wines and spirits sent to us by Gilbey and Co. are in great demand by the many patients who need a little stimulant after their deprivations at the front. It is very striking how delighted all the patients, officers and men alike, are to find themselves once more able to get sweets. We are able to give them jam very liberally and they consume enormous quantities of sugar; and any little extras such as lollipops, chocolates especially, are run after by these stern and tired warriors almost as if they were little children. I wish some of our friends would send us out supplies of sweets of all kinds, but especially chocolate. Some of the men would rather have a tin of chocolate than tobacco, although delighted with the latter. One of our difficulties is that coal is very expensive and oil is very difficult to get. The laundry is at last in full working order. Miss Cheeseman and four of her ward maids do the lighter work, the heavier being done by the blacks and the machinery being managed by two men who came out for that purpose. The laundry work is very heavy, especially as great care has to be taken in the disinfection of all linen from the enteric fever huts.

We have been rather bothered of late by petty looting on the part of some of the blacks employed in our service, but I anticipate it will not be difficult to stamp it out. Among other things three rifles were found the other day in their camping ground some quarter of a mile from our huts buried beneath their fireplaces, which seems to be the site they generally choose for concealing stolen goods.

We are all thoroughly devoted to this site which seems to us a most suitable place. So many of the hospitals nearer the seat of war contain such a large number of enteric fever and other medical cases that the surgical ones are sent as soon as possible to the various hospitals south of the Orange river. We therefore get a considerable proportion of surgical cases. We are fortunate in having an excellent water-supply and in not having large bodies of troops near us, for we are 27 miles south of the depôt at De Aar, to which place we are sufficiently near to collect the cases from the western border as well as from the line of Lord Roberts's advance. Surgeon-General W. D. Wilson, P.M.O., paid us a visit, and I am glad to say expressed himself as completely satisfied with the Imperial Yeomanry hospital. I wish he could tell us some reliable method of keeping the flies under, for they are a terrible nuisance. We have been fortunate in the fact of our Ladies' Committee in London with their business advisers, General Eaton and Mr. Oliver Williams, having thought of almost everything that would be necessary to our wants. There is now hardly anything needful in connexion with our work which we do not possess.

The detachment of men from the St. John Ambulance

Brigade and from the London Fire Brigade have worked magnificently. They have, indeed, had much to do, but I hope that now that the hospital is approaching completion they will have an easier time. The nurses and sisters, too, will find their work run more smoothly. I think by June 1st—that is to say, exactly six months after the letter to the *Times* from Lady Georgiana Curzon and Lady Chesham—the hospital will be in complete working order.

The large supply of spiritine sent by Sir James Blyth and the ingenious little frames for holding the kettle that came with it have been most useful. The wine, too, that he and his brother kindly sent and the tobacco forwarded by Messrs. Wills have all been most welcome. I wish these gentlemen could see the pleasure their kindliness has caused. Most of the packages of pyjamas, socks, caps and so on are found to contain very welcome additions of scent, tobacco, pipes, toothbrushes, &c. We are also very thankful to Messrs. Down Bros., who gave us our aseptic metal furniture for our operating theatre and to the many firms dealing in medical and surgical stores and apparatus who contributed valuable gifts.

Deelfontein, April 30th.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary meeting of the Comitia was held on May 17th, Dr. W. S. CHURCH, the President, being in the chair.

The following gentlemen were admitted as Fellows: Dr. Robert Bridges, Dr. Frederick Foord Caiger, Dr. Henry Albert Caley, Dr. Clement Dukes, Dr. Herbert Morley Fletcher, Dr. Leonard George Guthrie, Dr. Charles Montagu Handfield-Jones, Dr. Henry Head, Dr. Amand Jules McConnel Routh, Dr. Seymour Taylor, and Dr. Richard Thomas Williamson.

A communication was received from the President of the Tenth International Congress on Hygiene and Demography to be held in Paris from August 10th to 17th next, inviting the College to send a representative. The PRESIDENT nominated Professor W. Corfield, who is acting as President of the English Committee in connexion with the Congress.

The REGISTRAR (Dr. E. Liveing) moved that By-laws LXV. B. and XXIX. B., for the Election of Representatives of the College in the Senate of the University of London, be enacted for the second time.—The SENIOR CENSOR (Dr. Pye-Smith) seconded the motion, which was adopted.[1]

The REGISTRAR also moved the amendment of certain other by-laws necessitated by the alteration of the by-laws referred to above.—This was seconded by the SENIOR CENSOR and adopted.

A report was received from the Committee of Management on three subjects:—1. The Report of the Public Health Committee of the General Medical Council detailing certain recommendations in reference to the regulations for diplomas in public health. 2. Recommending that the following institutions, all of which have been visited by a member of the committee and reported on as fulfilling entirely the requirements of the Board, be added to the list of institutions recognised by the Examining Board of England: Berkhamstead School; Stonyhurst College, Blackburn; Central Higher Grade Board School, Bolton; and Merchant Taylors' School, London. 3. Recommending that the University of Manitoba be added to the list of recognised universities at which candidates may complete the curriculum of professional study for the examinations of the Board and where graduates may be exempted from the first and second examinations of the Board.

Dr. NORMAN MOORE explained the details of the report, which was adopted.

The PRESIDENT then dissolved the Comitia.

ASYLUM REPORTS.

Derby Borough Asylum (Annual Report for 1899).—The average number of patients resident during the year was 322, and comprised 154 males and 168 females. During the year 98 patients were admitted—viz., 49 males and 49 females, and of these 41 of each were first admissions. Dr. S. Rutherford Macphail, the medical superintendent, states in his report that this is the largest annual number of patients admitted during the last 11 years, the average annual admission of rate supported patients since the opening of the asylum having been 72. Only three private patients were admitted, and nine were out-borough patients received under contract from Middlesex County Asylum. "Eight men and eight women had formerly been under treatment in this asylum. 12 of the 16 cases were relapses after previous recovery. ..... The mean age of the patients admitted was 40·6 years; the youngest was eight years, the oldest 87 years. We have never admitted so many hopeless cases as regards the prospect of mental recovery. In only 42 of the 98 cases could the disease be looked upon as curable, so that recovery could be reasonably hoped for." The admissions included 11 general paralytics, six epileptics, four congenital imbeciles, five patients over 70 years of age, 11 chronic cases insane for years, and four cases dying from advanced malignant disease. In 58 cases suicidal tendencies were present and five of them required surgical treatment for self-inflicted injury before admission. Two patients were admitted with broken ribs. "The general health of the patients admitted was as unsatisfactory as usual. Over two-thirds of the cases suffered from recognisable physical disease and only 12 were in average bodily health. Five patients were admitted in a moribund condition and died within 10 days." One feature of the admissions was the large number of cases of general paralysis, the most fatal of grave brain diseases. The number of cases in which alcoholic excess was assigned as the cause was less than usual. "The number of instances in which influenza preceded the illness increases each year." The existence of an insane heredity was ascertained in 33 cases and it may be taken as certain that it existed in many more. Six cases of puerperal insanity were admitted as compared with a total of 18 cases admitted in the previous 10 years. During the year 32 patients were discharged as recovered, or 9·9 per cent. of the average number resident. "This is with one exception the lowest recovery rate in the history of the asylum and is entirely due to the hopeless character in regard to prospect of recovery of the majority of the admissions. ..... One-half of the recoveries obtained was among patients admitted in previous years—a most unusual occurrence." The number of deaths was 38, 19 males and 19 females, being 11·8 per cent. of the average number resident. Four deaths were due to senile decay, five to epilepsy, seven to gross organic cerebral disease (hæmorrhage, softening, &c.) and nine to general paralysis. Only one death was due to tuberculosis.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bournemouth Urban District.—Mr. Philip Nunn, the medical officer of health of this district, tells us in his current annual report that the Bournemouth Council is applying for Parliamentary powers to erect a crematorium in the Bournemouth East Cemetery. Mr. Nunn thinks that a provision of this nature will be "appreciated by the majority of the residents as well as by numerous visitors." We wonder whether those who appreciate the crematorium will also set an example by making use of it.

Eastbourne Urban District.—In discussing the origin of the cases of enteric fever which were notified in Eastbourne during 1899 Dr. W. G. Willoughby states that out of six imported cases two were of nurses from London hospitals. Of the local cases four, and probably seven, were traceable to infected oysters, while direct infection was the cause in the case of a nurse. He tells us, too, that one of the nurses at the sanatorium contracted the disease by direct infection, an occurrence which, he adds, is not common. Certainly out of the 22 cases notified in Eastbourne during last year a considerable proportion were nurses by occupation, and the experience of the hospitals of the Metropolitan Asylums Board tends to show that the staff engaged in nursing cases of enteric fever are not infrequently attacked by the disease. There is, indeed, much evidence tending towards the conclusion that the infectivity of enteric fever has been considerably underrated.

[1] These By-laws were published in the report of the Comitia held on April 9th, THE LANCET, April 21st, 1900, p. 1161.

Lowestoft Borough and Port Districts.—Dr. J. E. O'Connor protests against the practice, which he alleges is not as uncommon as it should be, of "correcting" the death-rate of a "health resort" by eliminating the deaths amongst visitors but neglecting to take account of those persons properly belonging to the district but residing outside it. The publication of rates such as these not only, Dr. O'Connor points out, vitiates statistics but by creating a false sense of security tends to put back sanitary reform. He thinks that rates calculated on populations loosely estimated should not be published without the sanction of the Local Government Board. As an illustration of the need of reform in the matter of a medical officer of health's relation to the water-supply of his district Dr. O'Connor remarks that although he has been in office nearly three years he has never entered the Lowestoft Waterworks.

King's Norton and Northfield Urban District.—Dr. Francis Hollinshead is much gratified at the manner in which the new Vaccination Act is operating in his district. The figures for 1899 show, he reports, a large increase in the number of children vaccinated in 1898, and he attributes this change to the more popular manner in which vaccination is now performed. Very few objections are, Dr. Hollinshead states, now experienced and he is convinced that as time goes on most of the children in his district will be vaccinated.

St. Marylebone Sanitary District.—Mr. Wynter Blyth, in his last monthly report, relates, when discussing his action under the Food and Drugs Act, that mice are able to distinguish between margarine and butter. The mice in the Marylebone Laboratory never attack the margarine samples but have, on the other hand, a great liking for butter. Mr. Blyth regards the fact as showing the highly-developed organs of taste and smell possessed by rodents.

Stoke Newington Urban District.—Dr. Henry Kenwood is of opinion that with a view to limiting the harm done by schools in the spread of infectious diseases the medical officer of health should possess a statutory right to enter the schools and examine the scholars whenever such a course appeared to him to be necessary. He thinks that if these precautions be not adopted "compulsory education will continue to be linked with some measure of compulsory disease."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6808 births and 4043 deaths were registered during the week ending May 19th. The annual rate of mortality in these towns, which had declined from 23·0 to 17·8 per 1000 in the six preceding weeks, rose again to 18·2 last week. In London the death-rate was 16·3 per 1000, while it averaged 19·4 in the 32 provincial towns. The lowest death-rates in these towns were 10·3 in Croydon, 10·5 in Cardiff, 11·9 in Swansea and 12·1 in Burnley; the highest rates were 23·3 in Sunderland, 24·6 in Salford, 25·3 in Liverpool, and 26·9 in Manchester. The 4043 deaths in these towns included 431 which were referred to the principal zymotic diseases, against 472, 429, and 441 in the three preceding weeks; of these 128 resulted from whooping-cough, 126 from measles, 69 from diphtheria, 37 from diarrhœa, 35 from scarlet fever, 35 from "fever" (principally enteric), and one from small-pox. No fatal case of any of these diseases occurred last week in Swansea; in the other towns they caused the lowest death-rates in Croydon, Birkenhead, Nottingham, and Newcastle; and the highest rates in Manchester, Oldham, Leeds, and Sheffield. The greatest proportional mortality from measles occurred in Plymouth, Huddersfield, Leeds, and Sunderland; from scarlet fever in Derby; from whooping-cough in West Ham, Norwich, Liverpool, and Oldham; and from "fever" in Wolverhampton. The 69 deaths from diphtheria included 22 in London, nine in Leicester, nine in Leeds, and eight in Sheffield. One fatal case of small-pox was registered last week in Oldham, but not one in any other of the 33 large towns; and only three small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, May 19th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1733, against 1660 and 1693 on the two preceding Saturdays; 221 new cases were admitted during the week, against 170, 176, and 203 in the three preceding weeks. Influenza was certified as the primary cause of 13 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 417 and 300 in the two preceding weeks, further declined last week to 270, and were 32 below the corrected average. The causes of 57, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Salford, Bradford, Newcastle, and in 14 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 21·7 to 17·7 per 1000 in the three preceding weeks, rose again to 19·5 during the week ending May 19th, and exceeded by 1·3 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·2 in Leith and 15·1 in Aberdeen, to 24·6 in Paisley and 30·4 in Perth. The 602 deaths in these towns included 30 which were referred to whooping-cough, 19 to measles, 15 to diarrhœa, seven to scarlet fever, seven to diphtheria, six to "fever," and one to small-pox. In all 85 deaths resulted from these principal zymotic diseases, against 75, 66, and 63 in the three preceding weeks. These 85 deaths were equal to an annual rate of 2·8 per 1000, which was 0·5 above the mean rate last week from the same diseases in the 33 large English towns. The deaths from whooping-cough, which had been 24 and 22 in the two preceding weeks, rose again last week to 30, of which 23 occurred in Glasgow and four in Aberdeen. The fatal cases of measles, which had been 15 and 16 in the two preceding weeks, further increased to 19 last week, and included 10 in Glasgow, five in Edinburgh, and three in Dundee. The deaths from diarrhœa, which had declined from 19 to nine in the four preceding weeks, rose again last week to 15, of which 10 were registered in Glasgow, two in Dundee, and two in Greenock. The seven fatal cases of scarlet fever corresponded with the number in the preceding week, and included five in Glasgow. The deaths from diphtheria, which had increased from three to six in the four preceding weeks, further rose last week to seven, of which four occurred in Glasgow and two in Edinburgh. The six fatal cases of "fever," showed an excess of three over the number in the preceding week, and included two in Glasgow, where the death from small-pox also was registered. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 145 to 91 in the four preceding weeks, further decreased to 84 last week, and were 19 below the number in the corresponding period of last year. The causes of 21, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7 and 26·3 per 1000 in the two preceding weeks, further declined to 23·0 during the week ending May 19th. During the past four weeks the death-rate in the city has averaged 26·5 per 1000, the rates during the same period being 17·8 in London and 19·4 in Edinburgh. The 154 deaths belonging to Dublin registered during the week under notice were 22 less than the number in the preceding week, and included nine which were referred to the principal zymotic diseases, against 11 and five in the two preceding weeks; of these, three resulted from "fever," two from measles, two from diarrhœa, one from diphtheria, and one from whooping-cough. These nine deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·7 in Edinburgh. The deaths referred to different forms of "fever," which had been three, six, and one in the three preceding weeks, rose again to three last week. The fatal cases of diarrhœa, which had been one and three in the two preceding weeks, declined to two last week. Two deaths from measles were registered last week, against none in any of the three preceding weeks. The mortality from whooping-cough corresponded with that recorded in the preceding week. The 154 deaths in Dublin last week included 27 of infants under one year of age and 40 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers registered in the preceding week. Four inquest cases and four deaths from violence were

registered; and 56, or more than a third, of the deaths occurred in public institutions. The causes of 11, or more than 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEON CHARLES MARSH BEADNELL has been specially promoted from Surgeon to this rank for services in South Africa. The following officer is noted for early promotion:—Surgeon James Grant Fowler.

IMPERIAL YEOMANRY.

Captain Graham Hay Reynolds to be Medical Officer.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel H. T. Chapman, A.M.S., r.p., proceeds to Bodmin for duty. Major Hearn has left in the *Britania* for South Africa.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the retirement of the undermentioned officers:—Surgeon-General Charles Edwin McVittie, Honorary Physician to the Queen, Madras Establishment; Colonel James Charles Gordon Carmichael, Bengal Establishment; and Lieutenant-Colonel Richard Nugent Stoker, Bengal Establishment.

YEOMANRY CAVALRY.

Gloucestershire (Royal Gloucestershire Hussars): Supernumerary Surgeon-Lieutenant-Colonel A. Grace resigns his commission, with permission to retain his rank and to wear the uniform of the regiment on his retirement.

VOLUNTEER CORPS.

The undermentioned officers are borne as supernumerary whilst serving with the Royal Army Medical Corps in South Africa:—*Artillery:* 1st Banff: Surgeon-Captain F. W. Grant. 1st Fifeshire: Surgeon-Captain S. Linton. 1st Midlothian: Surgeon-Lieutenant W. M. Taylor.

Artillery: 1st Lancashire: Surgeon-Captain T. M. Dawson to be Surgeon-Major. *Royal Engineers* (Volunteers): 1st Cheshire: Theodore Robert William Armour to be Surgeon-Lieutenant. 1st Lancashire: Surgeon-Lieutenant G. A. Hawkins-Ambler to be Surgeon-Captain. *Rifle:* 5th Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant-Colonel P. M. Davidson resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on his retirement. 1st Volunteer Battalion the Northamptonshire Regiment: Surgeon-Lieutenant H. Stedman to be Surgeon-Captain. 2nd Volunteer Battalion the East Surrey Regiment: Lieutenant James Dunbar-Brunton resigns his commission and is appointed Lieutenant (supernumerary). 3rd (Cumberland) Volunteer Battalion the Border Regiment: Thomas Graham Mathews to be Surgeon-Lieutenant. 1st (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant J. N. Marshall to be Surgeon-Captain.

THE ROYAL MILITARY TOURNAMENT.

The twenty-first Royal Military Tournament, which was opened by the Prince of Wales on May 18th, does not reach the standard of recent years; but that is not surprising when we consider that some 200,000 men of our army are in the field 6000 miles away. Nevertheless, both the committee and those who take part in the performance are doing their best to make the "majority" year of the tournament a success, and all are to be congratulated upon the result of their efforts obtained under difficult circumstances. *Tot homines quot sententiæ*, and it is difficult to single out any one item of the programme which does not meet with applause. Quite naturally the display by seamen of H.M.S. *Powerful* with a specimen of the now historic 4·7 gun excites the greatest interest. The gun which is drawn into the arena with spans of oxen measures 194 inches in length, weighs 42 cwt., and has an effective range of 10,000 yards. The projectile weighs 45 pounds. This display, together with that by the seamen of H.M.S. *Excellent* with their nine-pounders and twelve-pounders, are appreciated by the audience in a most marked manner. The always popular display by the detachment of the Army Gymnastic Staff and class of non-commissioned officers under instruction at the headquarters gymnasium at Aldershot admirably demonstrates the physical development of the men, but there is another side to the training which cannot be made equally manifest, and that is the quickness of eye, the alertness, and general activity which are also the outcome of this gymnastic practice. In the same way a word may be said for the bareback-riding by a squad from the Cavalry Depôt at Canterbury. A novelty this year is the jumping tent-pegging team from the Royal Field Artillery Riding Establishment at Woolwich. The competitions between the various arms of the service are as usual enthusiastically watched, as are also the spectacular part of the performances.

The pageant, "Defence not Defiance," illustrates the gradual development of the National Volunteer Organisation from the time of its revival in 1798 onward to the present day. The Corps enter the arena in the following order:—*First Section—1798-1800*:—Middlesex Cavalry, Clerkenwell Cavalry, Surrey Yeomanry, London and Westminster Light Horse, and Deptford Cavalry. Foot: Coleman-street Ward Volunteers, St. John, Southwark, Volunteers, Pimlico Volunteers, Christ Church, Surrey, Association Volunteers, 1st Surrey Regiment Volunteer Infantry, and Westminster Volunteers. Band. *Second Section—1860*:—Wiltshire Yeomanry, Gloucester Yeomanry, and 1st Surrey Mounted Rifles, Foot: Honourable Artillery Company, 1st Tower Hamlets Volunteers, 19th Middlesex, Volunteer Guards, Civil Service Rifles, City of London Rifle Brigade, South Kensington Rifles, 2nd South Middlesex, 1st Surrey Volunteers, 4th Islington Volunteers, and 1st Middlesex Royal Engineer Volunteers. *Third Section—1900*:—Middlesex Yeomanry, Imperial Yeomanry, Honourable Artillery Company (Gun Team with Gun), Honourable Artillery Company (Infantry), 2nd Middlesex Artillery, Tower Hamlets Engineers, 3rd London Rifle Brigade, London Scottish, Queen's Westminsters, 1st Volunteer Battalion Royal Fusiliers, 21st Middlesex, City Imperial Volunteers, 26th Middlesex, Volunteer Medical Staff Corps, and King's Royal Rifle Cadet Corps. The musical drive by N Battery of the Royal Horse Artillery and the musical ride by the 2nd Life Guards are also among the attractions of the tournament.

The unsuitability of the Royal Agricultural Hall for the purposes of the Tournament has frequently been pointed out by us and the difficulties of obtaining proper ventilation have been year by year grappled with by the medical officers in charge, with the result that the building has shown a great improvement in this respect year by year. Up to the present time atmospheric conditions have not been such as to tax to any great extent the conditions of the hall from the latter point of view. Major C. H. Hale, R.A.M.C., D.S.O., is the principal medical officer and Surgeon-Captain C. Thistleton Urquhart, V.M.S.C. assistant medical officer.

A TRIBUTE TO THE MEDICAL OFFICERS IN THE FIELD IN SOUTH AFRICA.

We are indebted to an esteemed correspondent for the following extract from a letter from a field officer of a distinguished regiment: "I do not know which has been the most admired out here—the wonderful organisation for the comfort and removal of the sick and wounded or the extraordinary personal gallantry under fire of the medical officers; and I can assure you the fire has been *hot*. I have known medical officers who had no right to be there borrow ponies and ride upwards of 30 miles to a fight and then saunter into the firing line just to tie up the wounded. I do not suppose every medical officer is a hero a bit more than every officer of my regiment, but there seems to be something wonderfully fine in a profession that lifts men so entirely above all apparent sense of personal danger. You may well be proud of the medical officers of the army, for their devotion has been a source of comment and praise not only amongst officers but men."

THE BIRTHDAY HONOURS.

Surgeon-General H. S. Muir, Deputy Director-General of the Army Medical Service, and Lieutenant-Colonel B. B. Connolly, Surgeon-Lieutenant-Colonel, late A.M.S., have had conferred upon them Companionships of the Bath. Lieutenant B. Neil Campbell, I.M.S., and Captain H. James, I.M.S., have received the newly instituted honour—the Kaisar-i-Hind medal for public service in India.

TRANSVAAL WAR NOTES.

The *Aurania* arrived at the Southampton Docks on May 23rd. She brought 568 invalids from South Africa, who were conveyed to the Royal Victoria Hospital, Netley, in special trains and duly admitted.

Major Culling, R.A.M.C., Captain Staddon, R.A.M.C., and Lieutenant Setby, R.A.M.C., have returned invalided from South Africa and have arrived at the Herbert Hospital, Woolwich.

A cot in the Victoria Hospital, Kingston-on-Thames, to be called the "Baden-Powell cot," will be endowed to commemorate the relief of Mafeking.

The additional material for the Welsh Hospital, making up the full complement of 100 beds, has left by the transport *Monteagle*. The extra members of the staff, dressers, and orderlies sailed on May 19th by the *Avondale Castle*.

The Mayor of Devonport paid his second visit to the Royal Military Hospital, Stoke, Plymouth, on May 19th. There are at present over 600 men in the hospital and the huts erected in the grounds, including 300 men who arrived on May 18th. The mayor, who distributed presents to the men, was received by Surgeon-General Evatt and Surgeon-Colonel Rahilly.

The Berkefeld Filter Company are just completing a contract for filters sufficient to supply every man now on active service in South Africa with filtered water.

Civil Surgeons D. Harris and H. Dingle have left England for the seat of war.

Captain R. D. Jephson, R.A.M.C., has been discharged from hospital in South Africa and has returned to duty.

Correspondence.

"Audi alteram partem."

"THE REPORT OF THE LANCET SPECIAL COMMISSION ON GLYCERINATED CALF VACCINE LYMPHS."

To the Editors of THE LANCET.

SIRS,—In the report of your Special Commission on Glycerinated Calf Vaccine Lymphs published in THE LANCET of April 28th last there is a misstatement which should be corrected.

Under the heading "The Use of Glycerine as a Preservative Agent" on page 1227 it is stated that Müller, Warlomont, and Stephen Mackenzie appear to have used glycerine as a satisfactory dilutent for the purpose of making the vaccine go further, but no purifying effect appears to have been aimed at. The name of Warlomont should not have appeared in this statement. His "Manual of Animal Vaccine" clearly shows that he was in 1867 quite aware of the antiseptic powers of glycerine; and I have in my possession records of trials from November, 1881, to January, 1882, of glycerinated calf vaccine for the express purpose of deciding the limit of its powers of preservation. These trials showed that vaccine as then prepared became unreliable at the end of a month—exactly the time now stated to be necessary to allow the glycerine to exert its full power of eliminating all "extraneous" organisms (see Conclusion 3, page 1226).

Since 1882 and until lately Dr. Warlomont's vaccine was prepared exactly as described in his patent dated Sept. 28th, 1882, No. 2643, and I think I am right in the belief that the mode of preparation of our Government glycerinated vaccine is practically the same, the only improvement which has been made since 1882 being in the more perfect trituration by Dr. Chalybäus's machine. From time to time reports were received on the activity of Dr. Warlomont's vaccine after keeping it for lengthened periods, but it was not thought wise to supply any but fresh vaccine, and fresh vaccine is what is now most frequently asked for. May I now be permitted to make a few general remarks upon your report?

In the first place, it appears to me that any comparative tests of vaccine lose their value if the tests made do not include the primary use of vaccine as a preventive against small-pox, and there is no assurance in the report that this necessary virtue was possessed by any of the samples under review. In the second place, the number of samples examined vary in an extraordinary manner. In the third place, the periods of examination after the samples were sent out are very different. Finally, there is no information to show the dates of gathering the vaccine.

A careful reading of the report seems to me to identify one of the Commissioners and I regret that I cannot at present accept the report as either impartial or free from trade interest. I cannot understand why the Local Government Vaccine which has been the subject of so many complaints on account of its unreliability has been accepted as a standard. Surely a standard vaccine should combine the qualities of bacteriological purity and perfect activity. Apart, however, from the inconsistencies which arise from the varying conditions of comparison which I have referred to and the arbitrary selection of one particular sample as a standard there are some points which I cannot reconcile with the general results published. For example, on page 1234 under the heading "The Standards by which a Lymph should be Judged" it is stated that: "Of course, each vaccinator soon finds out for himself with what brand he obtains the most consistently successful insertions, and on this matter it is easy enough for him to satisfy himself."

Hence it follows that a number of vaccinators so satisfied must also be accepted by the supplier as a proof of the satisfactory quality of vaccine supplied. The establishment which I represent has not only this satisfaction but another in the judgment of your Commissioners on the character of the vaccine supplied by us to them. For we fear that if our vaccine appeared "bacteriologically" equal to that of the arbitrary standard or to any other excellent vaccine prepared bacteriologically in accordance with the method advocated by Dr. Copeman it would certainly share in any complaints (such as appeared last year) of the unsatisfactory character of that of the Local Government Board.

The following particulars may interest some of the readers of your Commissioners' report:—

Vaccine obtained from 12, Pall Mall East, by Mr. G. W. Charles, of Emscote, Claremont-road, St. Margaret's, Middlesex.

Sample.	Days after receipt.	Actual age in days.	Trials at New Scotland-yard. Date.	Adults re-vaccinated.	Insertions made.	Good vesicles obtained.	Percentage vesicles per insertions.
1898.			1898.				
N. 2702 ...	8	33	May 4th.	15*	45	44	97·7
N. 6083 ...	15	21	Nov. 23rd	13*	39	35	89·7
1900.			1900.				
P. 503 ...	4	19	Jan. 24th	10†	30	28	93·3
			,, 31st.	10†	30	29	96·6

* Part of these were vaccinated in childhood only and part were re-vaccinated since.

† These were vaccinated in childhood only.

In the present imperfect and uncertain knowledge of the bacteria of vaccine would it not be better that the Local Government Board and the vendors of glycerinated vaccine should give the date of gathering with the vaccine sent out? If this were done and the users would ask for fresh-stored vaccine, as their experience prompted, a great deal of sound information would be collected and the vexed question now pending might be decided.

I cannot close this letter without a protest against the underhand way in which the vaccine used by your Commissions was obtained. I consider it was little else than an insult to the suppliers. Still, if the applications had been made in a straightforward way, your Commissioners might have been subjected to practical jokes such as that mentioned in Dr. Hime's letter.

I am, Sirs, your obedient servant,

EDWARD DARKE.

Pall Mall East, London, S.W., May 22nd, 1900.

*** We do not accept any of Mr. Darke's corrections, nor do we consider any of them worthy of comment. But as he has allowed himself to make the suggestion that one of our Commissioners is interested in trading in vaccine lymphs we inform Mr. Darke that he is wrong as well as

offensive. Mr. Darke is evidently angry and we put down his want of manners to loss of temper and forgive him.—ED. L.

To the Editors of THE LANCET.

SIRS,—In a recent number of THE LANCET you published a report of an investigation which had for its object to discover how far the recommendations of the Local Government Board were being carried out in respect to the collection and preparation of lymph. We have submitted this report to the medical expert under whose care the lymph we supply is prepared and shall be glad if you will give his remarks equal publicity.

The number of germs in a glycerinated lymph is dependent on its age; glycerine, as was shown by the preliminary trials made by the Commission, possesses the power of conserving the specific virus of vaccine and of gradually destroying bacteria in it. If lymph which has been kept a certain time be experimented with very few organisms will be found in it, whereas if the same lymph had been examined at an earlier period many more would have been discovered. Such lymph at the later period would still possess a high degree of specific power, but if kept for a still longer period, especially in small quantities, not only do the extraneous organisms disappear but the lymph loses its activity. This is especially rapid if the lymph is not kept in a favourable, cool temperature. It was, therefore, hardly fair to make comparisons between lymphs of different age, as the Commission appear to have done. In fact the Commission do not at all mention the age of the lymph which they examined, and the comparative table of results is rendered thereby quite misleading.

When lymph is wanted for immediate use there is no difficulty in supplying a lymph which has been kept sufficiently long to remove all extraneous organisms but which still possesses its full activity, and it is important that medical men should be able to obtain a lymph upon which they can rely. On the other hand, if lymph is going to be kept for some time before use it should be of more recent origin and should be stored under proper conditions. It would be well in any further experiments undertaken by the Commission if they recognised this essential difference; it is equally essential that in comparing different specimens of stored lymph they should see that the samples have not become inert. Clinical and bacteriological experiments should always be made simultaneously. There are other points in the report which are open to criticism, but as the report is based upon defective data from the beginning further comment is unnecessary. We would only add to the above remarks that if medical men when purchasing our lymph will inform us whether it is required for immediate or for future use we can supply them accordingly.

We are, Sirs, yours faithfully,

REBMAN, LIMITED.

May 21st, 1900. (F. J. REBMAN, Managing Director.)

*** The medical expert and Mr. F. J. Rebman can scarcely have read the report of our Commissioners very carefully. We commend to their attention the following passages:—

"Whenever a large number of staphylococci remained in the lymph at the time that the plates were made the period of glycerination had not been sufficiently prolonged." P. 1234, Remarks par. 1.

"A point on which all practitioners should insist is that the date of glycerination, as well as the dates between which the makers recommend that the lymph should be used, should be given with every sample of vaccine lymph which they receive. Of some of the samples examined we should say from our experience of them at different periods that when they came to us they had not been subjected to the action of the glycerine for a sufficiently long period." P. 1235, Macroscopic Impurities.

"From a consideration of those brands that were examined and re-examined we are compelled to come to the conclusion that in certain instances the process of glycerination had been imperfectly carried out. It may be that the lymph had not been stored sufficiently long after being glycerinated or, on the other hand, that the mixing had not been sufficiently well carried out or too small a quantity of glycerine had been used." P. 1236, Conclusion No. 3.

When a practitioner sends for three tubes of lymph it may be assumed that he wishes to use it at once or at any rate within three or four days. In one or two instances the date of collection of lymph was given; indeed, in one sample at least of the Rebman Publishing Company's lymph this was done, but no instructions as to the meaning of this were sent out. In one or two cases instructions were given that the lymph should be used within a certain period, but no warning was ever issued against its being used before a given time. Our contention throughout is that the vaccine has been plated out just as it would probably be used for vaccination. We maintain that the information at present supplied to the practitioner is not sufficient to enable him to form any opinion as to its bacterial purity (or impurity) or whether it has been in the glycerine for a long enough period. We could not apply for information that is not given to every medical man who buys a sample of lymph, but we used all the information that was sent out with the various samples. If a lymph was sent out without any special instructions it was used for experiment just as it might have been used for vaccination.—ED. L.

THE FALLACY OF EXPECTING UNABSORBABLE SUTURES TO REMAIN BURIED IN MUSCULAR TISSUES.

To the Editors of THE LANCET.

SIRS,—At the present time unabsorbable ligatures and sutures of which silk may be taken as the type are freely buried in muscular structures, of which the incisions made in performing cœliotomy and the radical operation for hernia are examples. The advocates of such sutures contend that so long as the wound and the sutures are sterile the sutures will become encapsuled and give no further trouble. As a matter of strict fact an absolutely sterile operation is, with our present technique, a rare occurrence if judged by bacteriological evidence. On the other hand, the working test of the relative sterility of a wound is its power of union by first intention, which bids fair to be the generally accepted standard for some time to come.

Given a wound which contains a buried silk suture and which has healed by first intention, why is it that at the end of months or even years a small sinus forms which persists until the offending silk is extruded or removed? Some surgeons contend that the ligature was infected at the time of its insertion, others believe that infection of the ligature occurs at a later period, possibly through the medium of the blood-stream. Whatever may be the true explanation the fact remains that these sutures do resurrect from time to time and with a greater frequency than many operators are prepared to admit. It is well known that in the case of a man peppered with shot the shot continue to put in an appearance for many years after the wounds of entry have firmly healed and often in regions far remote from their original position. A very similar performance occurs in a man who is peppered with silk. The foreign body, silk or shot, lying among tissues which are constantly changing in form and in their relations to each other, is slowly started by these movements on its travels. It is fortunate for the patient that the ligature so often makes its way out by the shortest route—i.e., through the scar.

The use of unabsorbable ligatures appears to be based on an exaggerated idea of their capabilities for holding parts together almost indefinitely. Three weeks at the outside is the time allowed for skin sutures before their removal, but these stitches only act as sutures for this period in the absence of tension. If there is tension the sutures take the matter into their own hands and by cutting out very soon become either entirely free or lie loose among the tissues; in either case their further use as sutures is practically *nil*, although by the time this has occurred the skin incision has often united and the skin itself formed strong adhesions to the subjacent parts. A very similar process occurs with buried sutures, so that in a very short time we have a collection of pieces of knotted silk either still transfixing tissues which have firmly united or, if they have cut out, lying loose, and in either case their further presence is useless. An interesting point is the frequency with which these sutures first begin to give trouble on the patients getting up and moving about. It must not be imagined that every buried ligature is extruded. A certain number do undoubtedly become embedded in scar-tissue,

while others drift away, propelled by muscular contraction, until they get into a quiet corner where they can rest and become enveloped in fibrous material. The fate of the buried silk ligature which does not work out has not yet been thoroughly settled. Certain it is that the site of buried ligatures may be explored at varying intervals after healing has taken place and only a few or none of the ligatures found. This has even been argued to prove that the unabsorbable ligature has achieved the impossible and has become absorbed. The alternative to an unabsorbable ligature is one of material capable of being absorbed, of which catgut is the type. It is on ligature material of this nature, hardened if necessary by various reagents to make absorption a matter of weeks, that surgeons will have to rely if they wish to save their patients and themselves the trouble and annoyance caused by re-appearing ligatures. In an infected wound an absorbable ligature usually disintegrates and comes away with the pus instead of remaining behind and acting as a seton which is the not infrequent behaviour of the silk ligature. The belief that an unabsorbable body, if sterile, will remain indefinitely buried among muscles has been responsible for many remarkable performances in the past, but even these pale before the insertion in the abdominal parietes of a wire fence which has lately been put forward as a rational method of treating hernia.

I am, Sirs, yours faithfully,

Plymouth. C. HAMILTON WHITEFORD.

PSEUDO-DIPHTHERIA.

To the Editors of THE LANCET.

SIRS,—I shall be obliged if you will allow me to invite the attention of your readers to a question in diagnosis with regard to which I think we stand in need of fuller information than we now possess. During March and April a form of inflamed and infectious throat was prevalent in London and, I believe, in various country districts also. Occasionally one meets with cases of this kind which are apparently not induced by Löffler's bacillus but which can hardly be distinguished clinically from true diphtheria. Such has been my experience, and I trust the fact will excuse this intrusion upon your valuable space. I select the following case in illustration.

On April 5th a little girl, aged four and a half years, was taken ill. She was suffering from what seemed to be a mild tonsillitis. There was slight patchy formation of false membrane on the tonsils. This was painted over with iodine and for a few days the child seemed well, though a small point of slough lingered on the left tonsil. On the 8th some swelling of the cervical glands below the angle of the jaw on both sides was noticed. On the 10th the temperature rose to 103° and now for the first time two fresh patches of false membrane were observed on the velum palati in front of the left tonsil. To cover a suspicion of diphtheria 1500 units of antitoxin diphtheriæ were promptly injected. This dose was repeated on the next day. Local measures of treatment were of course continued as usual. On the 14th I had a report from the laboratory of Messrs. Burroughs and Wellcome on mucus which had been sent to them, stating that the bacillus diphtheriæ was absent, but that the staphylococcus and the streptococcus longus had been found. The urine examined on this day contained albumin. A week later this had disappeared. The temperature fell gradually, not suddenly, after the 10th and the false membrane cleared off in the same gradual manner only to return at the old spot. On the 20th another patch was noticed on the right faucial pillar. The condition at this time was indistinguishable from diphtheria, and after consultation antitoxin was once more injected. No decided benefit followed the injection, and another report on the mucus on this occasion was similar to the former. The left cervical glands which had gone on enlarging began soon after this to suppurate, and a large abscess was opened here on the 26th. The child improved and was practically well on May 4th. Up to this date, however, small unhealed patches were visible on the two anterior pillars of the fauces. The appearance of the false membrane on the velum in this case was peculiar. It was of a translucent white, not a dead white or cream colour. It seemed as if a bleb of cuticle had been raised and lymph deposit had taken place under this. The spots appeared to heal like superficial ulcerations. These points appear to me to suggest a condition of throat erysipelas more than any other.

The case recalls, and to my mind helps to explain, another which puzzled me somewhat during an attendance in February, 1899. The patient was a young, healthy adult woman. The throat characters were similar to those of the last case, but there was more diffuse redness at the outset and at first no visible false membrane, though this appeared soon after. The uvula, moreover, was invaded towards its apex. Chlorinated soda gargle was used very freely. Between the fifth and tenth days of my attendance 6000 units of antitoxin diphtheriæ were injected and apparently with marked and rapid benefit as regards the clearing of the throat, though small pustules recurred during these days. No microscopical examination was made till the eleventh day, at which date local signs of disease were still present. Mucus sent to the Jenner Institute on this day did not reveal the bacillus diphtheriæ. The patient recovered and had no sequelæ.

Some doubt may perhaps exist as to the character of the second case, but I think this can hardly be said of the first. Its clinical development and the failure on two occasions to discover the bacillus diphtheriæ while other morbid germs were found distinguish it from true diphtheria. But it certainly showed several of the characters of the latter disease. Albuminuria and a false membrane on the front of the velum palati are especially noteworthy points. Under the circumstances I do not regret having used the antitoxin diphtheriæ. I should use it again in a similar case until convinced of its futility rather than fail to cover a possible error in diagnosis or the possibility of a mixed infection. Nevertheless the case is to me instructive chiefly of the fact that another germ, probably a streptococcus, is capable of producing local and even general effects not readily distinguishable from those of true diphtheria. Serum therapeutics in order to meet the necessities of this class of throats must evidently be carried a step further.

I am, Sirs, yours faithfully,

Green-lanes, N., May 15th, 1900. B. G. MORISON.

PUBLIC MEDICAL SERVICE, COVENTRY.

To the Editors of THE LANCET.

SIRS,—In the interest of reform in medical contract work I desire to lay before the profession some information regarding the work of this organisation. We have just held our eighth annual meeting and from the facts at our disposal we may claim to have achieved a great measure of success. Started with the object of attacking some of the anomalies of contract societies and bringing this work as far as possible under professional control we have succeeded far beyond our original dreams. We have fairly staggered the medical aid societies, inducing all respectable practitioners in the city to relinquish this kind of work. We have absorbed into our service the bulk of these patients. Some of the societies have absolutely ceased to exist. The abuses of the Coventry Dispensary are somewhat mitigated as a result of our sustained attack, and we still hope for the assistance of the British Medical Association in urging further reforms. Many problems affecting the profession have attained a certain measure of solution. Our policy has been to a great extent of a constructive nature. It was urged as a possible source of weakness that we did not admit the lay element on our committee of management. We have found no difficulty here, the working is smooth with practically no complaints. The competition existing amongst medical men is sufficiently keen to act as a regulating force in this direction. If men neglect their patients a natural consequence follows, and no lay committee seems necessary to manage our affairs, sitting in judgment and often harassing us with petty tyrannies. Charging higher terms than the Dispensary, we have on our lists the bulk of the mechanical labourers. As the saying goes "the Dispensary doctor goes by the front door, the Service doctor by the back." We have now on our books 8886 names; our receipts last year amounted to £1818 0*s.* 7*d.* The increase in our collection over previous year was £200 5*s.*, which compares well with the report of the Dispensary, which announces an increase only of £75. The Coventry Public Medical Service stands prominent as an object lesson to practitioners, and other towns are adopting a similar plan. We have proved by experience that practitioners by combination can get a fair measure of control over

their own work. Such a course must give them a greater dignity in the eyes of the public. There will not be the same necessity to place themselves under the control of laymen, who have a contempt for professional combinations and whose institutions largely depend for their success on the existence of an over-stocked medical market.

I am, Sirs, yours faithfully,
W. RICHARDSON RICE, B.A., M.D. Dub.,
Honorary Secretary, Public Medical Service.
Coventry, May 20th, 1900.

"THE CONFERENCE ON MEDICAL ORGANISATION AT MANCHESTER."

To the Editors of THE LANCET.

SIRS,—I crave a little of your space to make a few remarks on the criticisms of your Special Commissioner on the Manchester Conference in THE LANCET of May 12th (p. 1382). His chief criticism isthat a conference on medical organisation ought not to have dealt with grievances, and at first sight that is so. But this conference was being convened on very different lines from anything previously attempted in connexion with the profession, and it seemed to those who had the arrangements in hand that it was not enough to *talk* about the value of the principle of delegation, but that it would be far more to the purpose to give a *practical demonstration* of its value. That was the central idea underlying the whole affair. The first and second days of the conference were devoted to this demonstration, and I think, and so do the majority, if not all, of those present, that it was a decided success. Had it not been it is scarcely likely that the third day would have seen the principle of delegation embodied in the resolution which I moved so readily adopted. Regarding the representative character of the conference it is quite correct to say that 4000 members of the profession were represented. Half of these were members of branches of the British Medical Association and half were members of local societies in all parts of the country. The Hospital Reform Association did not send a delegate. How far the delegates were instructed by the societies sending them I am not in a position to say, but it was no fault of the system or of the authorities of the conference if they were not. The agenda was in the hands of the secretaries and delegates a full month before the date of the meetings, and the introductory note expressly directed their attention to this point and urged them to give full instructions to their delegates how to vote on the different resolutions. The authorities of the Conference have no right to think that the delegates voted any way than in accordance with the expressed directions of their societies, and if any delegate did then it is for his society to bring him to order.

In conclusion, I have only to say that destructive criticism is always an easy matter, but I fancy that the mistakes of those who are working honestly for any cause are of more value to that cause in the long run than the adverse criticism they excite, particularly of that kind which is so ready to tell us what we should have done but is not so ready to indicate the lines of future progress.

I am, Sirs, yours faithfully,
SAMUEL CRAWSHAW, M.B. Vict.,
Honorary Secretary to the Conference.
Ashton-under-Lyne, May 21st, 1900.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—Whilst agreeing with Captain Clayton Lane, I.M.S., that all important particulars should be given in these unfortunate cases, I cannot agree that his letter in THE LANCET of May 19th (p. 1467) will encourage young practitioners to take the trouble to record cases. In speaking of Dr. Mowat's letter he says: "Possibly he carries the same principle—the principle of sketchiness—yet further, for he seems to imagine that the clinical observation of a patient under chloroform close enough to ensure the subsequent unity of a full and accurate report of his symptoms places his life in danger. Can one argue with such an one?" I do not know what Captain Clayton Lane wants to argue about. Dr. Mowat remarked on the difficulty of relating all the details some time afterwards, and the efforts made to prevent a person dying under an anæsthetic, and afterwards the appearance before a coroner's jury are not conducive to a long and detailed report. I pressed Dr. Mowat to report the case and if he did not wish to write a paper on the case he could record it in your Hospital Mirror. This he did, and for several reasons curtailed it. My desire was to have the case on record as a death from chloroform, believing as I do that all deaths from an anæsthetic should be recorded, even if the scientific details are omitted. In this case the coroner did not order a post-mortem examination, and, unfortunately, one was not made, so that if Dr. Mowat had reported all the clinical details of the patient it could not have been complete without a pathological report. I think that in every case of a death from an anæsthetic we should have it (1) reported, (2) a post-mortem should be made, and (3) a clinical history of the patient and the case should be given. If we cannot get these then let us have a record of all deaths due to chloroform and other anæsthetics and take them for what they are worth, without dubbing the recorder as one who has the "principle of sketchiness." Dr. Mowat is an able anæsthetist and it was a painful shock to him to have a death from an anæsthetic which he is accustomed to administer, and I can understand how easy it was to leave out details in writing his report some days after.

I am, Sirs, yours faithfully,
Wigan, May 19th, 1900. WILLIAM BERRY, F.R.C.S. Irel.

MEDICAL ETHICS AND THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—At the spring meeting of the North of England Branch of the British Medical Association held at South Shields on April 16th it was unanimously resolved to petition the Council of the Association to set apart one day at the annual meeting at Ipswich for the discussion of medical ethics and medico-political subjects. I hope that other branches will take steps to support this and make a similar request. I am, Sirs, yours faithfully,
Durham, May 21st, 1900. EDWARD JEPSON.

CAMBRIDGE APPOINTMENTS ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly give publicity to the fact that we have upon our books a large number of those who are just completing their career at the University and who are anxious in the course of the summer to enter upon various departments of practical life both in England and abroad? This association has met with so much sympathy during the short time it has been started that we feel confident that many, especially old Cambridge men, need only to be reminded of its existence to avail themselves of its aid if opportunity occurs.—I am, Sirs, yours faithfully,
W. A. J. ARCHBOLD, Secretary.
73, Trumpington-street, Cambridge,
May 19th, 1900.

"ON THE MODERN TREATMENT OF DIABETES MELLITUS."

To the Editors of THE LANCET.

SIRS,—I should be glad if you would print a note in THE LANCET to indicate the following erratum. The error is mine. I am, Sirs, yours faithfully,
May 21st, 1900. ROBERT SAUNDBY.

ERRATUM.—On page 1424 of THE LANCET of May 19th the quantity of cheese in B diet should be three ounces and not two ounces as printed.

THE PATHOLOGICAL SOCIETY: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you will allow me to correct two errors which occur in the report of the proceedings of the Pathological Society of London in THE LANCET of May 19th, 1900, p. 1441.

1. It was to Dr. Edington (not Edingham) that I ascribed the credit for much that has been ascertained regarding the pathology of African horse-sickness.

2. I did not state that filtration does not arrest the virus

of rinderpest; indeed, I did not refer to that disease at all, though I think a subsequent speaker mentioned the fact that the virus in question is arrested by a porous earthenware filter.

I am, Sirs, yours faithfully,
J. MCFADYEAN.

Royal Veterinary College, N.W., May 22nd, 1900.

THE SANITATION OF DUBLIN.

To the Editors of THE LANCET.

SIRS,—You have not been supplied with an accurate statement in reference to the waking of a child at a place close to Fitzwilliam-place. The facts are as follows. A child, aged seven months, died from "decline" on April 4th, the day the Queen entered Dublin. The Cemetery office having been closed early in honour of the occasion, a burial ticket could not be obtained until the following day and on the next one (April 6th) the child was buried. In England the burial of a person two days after death is unusual. You imply censure on the sanitary authority because the child was "waked," but may I ask upon what grounds? The disease was not notifiable, and is it expected that the sanitary authority is to know of every death from diseases notifiable or non-notifiable that occurs in Dublin, and that they can prevent the "waking" of persons who die from the latter diseases? In the case of deaths from contagious diseases the sanitary authority is in a position to prevent wakes and invariably does prevent them. I pass over your strictures on the sanitary administration with the mere remark that the recent inquiry into the causes of the Dublin death-rate shows that such strictures are undeserved

I am, Sirs, yours faithfully,
CHARLES A. CAMERON,
Medical Superintendent Officer of Health.

Public Health Office, Municipal Buildings, Dublin,
May 22nd, 1900.

*** Sir Charles Cameron accuses us of publishing an inaccurate statement, we therefore print his account and our own side by side:—

SIR CHARLES A. CAMERON.	THE LANCET.
..... In reference to the waking of a child at a place close to Fitzwilliam-place. The facts are as follows. A child, aged seven months, died from "decline" on April 4th, the day the Queen entered Dublin. ..... A burial ticket could not be obtained until the following day and on the next one (April 6th) the child was buried.	Close at the back of Fitzwilliam-place there is a noisome den where a child died from tuberculosis during Her Majesty's gracious visit to her Irish capital. Seven other children were allowed to keep up a wake for three days round the corpse which was already in a state of decomposition.

Where is the inaccuracy? Sir Charles Cameron admits the waking and his dates show that such waking could have occurred on three separate days. If he denies that seven other children were present we are compelled to contradict him. As to whether the sanitary authority of Dublin can stop such lurid occurrences we have only to say that it should have powers to do so. If it has not it should apply for them: if it has it should use them.—ED. L.

HOSPITAL CERTIFICATE FEES.

To the Editors of THE LANCET.

SIRS,—At a well-known general hospital in the northern provinces, where I am senior house surgeon, it has been customary for the senior and junior house surgeons to sign insurance and Employers Liability Act medical certificates and retain the small fee obtainable for so doing, the amount of the fee being fixed by the rules of the institution. The committee of the hospital have just made a new regulation by which the fees must now be handed over by the house surgeon to the general funds of the hospital, though he is still to see cases, fill up certificates, and collect the fees. In many cases this involves reference to ward notes and registers and always takes up time. The amount of money so collected will barely amount to £20 in a year, of which amount the junior retains fully £15, as he is in charge of the out-patient department where most of the certificates are applied for. The points I raise are as follows: (1) that the house surgeons' signatures entitle them to the fee chargeable, as the certificates could quite well be signed by the honorary surgeon of the hospital in whose charge the case nominally is; (2) that the honorary surgeon would certainly be entitled to a fee for such work and that the hospital could get it only by donation from the surgeon. In the out-patient department the *assistant* surgeons are paid by the infirmary for their work and are therefore in a similar position to the house surgeons; they are equally qualified to sign these certificates, and their reply to the committee if asked to do so instead of the junior house surgeon and to hand over the fee would be curt and a little rude I should imagine.

I should be much indebted for an opinion on this point, for, as far as I am able to ascertain, the fees so obtainable by house surgeons are regarded as their perquisites in other hospitals.—I am, Sirs, yours faithfully,

May 19th, 1900. SENIOR H.S.

THE MIDWIVES BILL.

To the Editors of THE LANCET.

SIRS,—At a meeting of the Woolwich, Plumstead, and Charlton Medical Union, held on May 16th, it was resolved:—

That this meeting disapproves of the Midwives Bill now before Parliament.

I was instructed to communicate the Union's decision to you, asking you kindly to insert it in THE LANCET.

I am, Sirs, yours faithfully,
HONORARY SECRETARY, WOOLWICH, PLUMSTEAD, AND
May 19th, 1900. CHARLTON MEDICAL UNION.

GERMAN CONGRESS OF INTERNAL MEDICINE.

(FROM OUR BERLIN CORRESPONDENT.)

(*Continued from p. 1526.*)

Cardiac Arhythmid.

DR. WENCKEBACH (Utrecht) read a paper on the Causes of Cardiac Arhythmia. The regularity of the cardiac action depended (1) on the automatic irritability of the heart; (2) on the propagation of the motor stimulus from one muscle cell to another; and (3) on the property of contractility. Intensification of the automatic irritability increased the frequency of the systoles, and in this manner the so-called "frustraneous contractions" and the pulsus trigeminus, intermittens, &c., were produced. Lowering of the capacity for propagation of the motor stimulus gave rise to a regularly intermitting pulse and to bradycardia, whilst an abnormal increase of the capacity for propagation of the motor stimulus and an intensification of the stimulus itself produced "delirium cordis." The "pulsus alternans" was due to weakness of the cardiac contractility. These disturbances of the three principal functions of the heart may be present together.

Paroxysmal Tachycardia.

Dr. HOFFMANN (Düsseldorf) was of opinion that this condition was not caused either by acute dilatation of the heart or by a neurosis of the vagus nerve. Paroxysmal tachycardia had been found by him together with an abnormal increase of the secretion of urine so that it might be regarded as a cerebral disorder the seat of which was in the fourth ventricle.—In the discussion Professor NOTHNAGEL (Vienna) agreed generally with Dr. Hoffmann; he believed that the cerebral centre concerned in tachycardia was situated in the medulla oblongata.

Cyanosis.

Professor VIERORDT (Tübingen) said that cyanosis in congenital affections of the heart was not always caused by the mixture of arterial and venous blood; cyanosis might be absent in such cases even when there was an extensive deficiency of the septum. He was induced by his experiments to believe that the phenomena of cyanosis were due merely to the presence of an excessive amount of blood in the cutaneous veins and capillaries.

Chronic Jaundice.

Professor MINKOWSKI (Strassburg) reported cases of Hereditary Enlargement of the Spleen together with Jaundice observed by him in several patients belonging to the same family. Urobilin was present in the urine. One post-mortem examination was made. The spleen was found

to be greatly enlarged, weighing more than a kilogramme (2·2 lb.); the liver was normal; in the kidneys there was a brown pigment containing iron. Professor Minkowski believed that the disease was caused by an anomalous condition of the blood pigment.

Gouty Diseases of the Stomach and Intestines.

Dr. GRUBE (Neuenahr) said that certain dyspeptic troubles were of frequent occurrence in gouty patients, a circumstance which had been observed principally by English physicians, and attacks of gout sometimes began with these symptoms. Some patients had remarked that their fæces smelt very offensively before a fit of gout.—In the discussion Professor VON NOORDEN (Frankfort) maintained that these dyspeptic troubles were not a characteristic symptom of gout. In his opinion they were observed almost exclusively in well-to-do patients and were caused by misuse of drugs and by a too liberal diet.

Researches on Antitoxins.

Professor WASSERMANN (Berlin) said that except in the case of diphtheria the results of the antitoxin treatment had not been very favourable. Anti-cholera, anti-typhoid, anti-pneumococcic, and anti-streptococcic sera had been tried without success. Experiments made by Professor Ehrlich have shown that the action of bactericide sera depended upon two substances—the immunising or "intermediate" substance and the so-called "complement." Both substances together had a specific action against the virus. Hitherto the intermediate substance which was present in the serum of immunised animals had been used exclusively in the serum treatment of enteric fever, and the "complement," of which a certain quantity was present in the normal blood-serum, had been neglected. A coöperation of both the intermediate and the complement substances being essential for an antitoxic action, Professor Wassermann accordingly, apart from the serum of immunised animals, injected a certain quantity of fresh normal blood-serum. It was of great importance to find the adequate complement to a given immunising serum. He made experiments on guinea-pigs infected by a culture of enteric-fever bacilli. Three of the guinea-pigs received injections of serum taken from an immunised dog, the result being that the three animals died. In another series of guinea-pigs together with the above serum a quantity of serum taken from normal, not immunised, cattle was injected, and by this method the infection was effectually overcome. Professor Wassermann concluded that by the administration of fresh serum of cattle the action of the immunising substance was practically very much augmented. He hoped now to be able to obtain good results in the human subject.

Bence-Jones's Albumin.

Dr. MAGNUS LEVY (Strassburg) read a paper on the Substance discovered by Dr. Bence-Jones in the Urine of Patients suffering from certain Diseases of the Bones. This substance was said to be characteristic of myelogenic sarcoma, but was present in myxœdema also. According to Dr. Magnus Levy it was not an albumose but an albuminous substance having many of the qualities of albumin. Sometimes it was soluble at a temperature of 100° C, but not always, and the same thing might happen with albumin also under certain circumstances. The origin of Bence-Jones's albumin was not yet known. Dr. Magnus Levy believed that it was not formed within the myeloma. Perhaps it might proceed from the albumin of the food.—Professor SENATOR (Berlin) asked why this substance, if it was formed by the food, was present only in myeloma.—Professor VON JAKSCH (Prague) said that too much reliance must not be placed on the diagnostic value of Dr. Bence-Jones's albumin, for it had been absent in three of his cases of myeloma.

Oxygen as a Therapeutic Agent.

Dr. MICHAELIS (Berlin) said that inhalations of oxygen were used as early as 1774, but afterwards the method fell into disuse because toxic symptoms were sometimes observed; at the present time where pure oxygen was employed undesirable symptoms no longer occurred. In disturbances of the respiration caused by diseases of the lungs or heart, or by the action of toxic agents, the patient's general state was benefited by the inhalation of oxygen. In poisoning by morphia the respiration was improved and the cyanosis disappeared. Oxygen had a specific therapeutic action in cases of poisoning by morphia and carbonic oxide.—Professor VON JAKSCH agreed with the views expressed by Dr. Michaelis and said that he had seen a good result in a case of diabetic coma.—Dr. MERKEL (Nuremberg) related two cases of poisoning by carbonic oxide, in one of which oxygen was administered, whilst in the other only artificial respiration was employed. The former case recovered much sooner than the latter.

The next congress will meet in Berlin under the presidency of Professor Senator.

THE PARIS WATER-SUPPLY AND THE EXHIBITION.

(FROM OUR SPECIAL CORRESPONDENT.)

FOR some months previously to the opening of the Universal Exhibition alarming rumours were spread about concerning the supposed contamination of at least a part of the Paris water-supply. As this is a technical question that cannot be understood without careful reading and investigation the greater part of the population had neither the time nor the inclination to study so intricate a problem. There were consequently less anxiety and alarm manifested than might otherwise have been the case. Some sensational articles were published in various papers, and one of these articles went so far as to say that the waters of the Avre were "proverbially" known to be infected and were even worse than those of the Ourcq, which is the dirtiest water in the neighbourhood of Paris. As these alarming statements, however, concluded with a recommendation to use a certain filter there were good reasons to suspect the motives of such publicity. Again, other papers which systematically attacked the town water-supply as systematically advocated the promotion of certain financial companies which were to undertake to provide the town with a new supply. There is, for instance, a scheme for bringing water from the Lake of Geneva to Paris and another for digging numerous artesian wells. A well of such a description has been dug and it yielded 3000 litres of water per day, but on digging two other wells the supply from the first well was considerably reduced and thus it was demonstrated that the supply of water does not increase in proportion to the number of wells. Nevertheless, though a suitable discount must be be allowed when dealing with these denunciations there still remains a substratum of fact which justifies some anxiety. At the beginning of the year there was a severe epidemic of typhoid fever at the grammar school of Lycée Saint-Louis, but it may at once be remarked that if this epidemic had been due to the water-supply then there would have been other cases of typhoid fever in the neighbourhood of the school where the houses are supplied with the same water; this, however, was not the case. On the other hand, there is much to show that the insanitary condition of this important educational establishment was itself sufficient to account for the prevalence of fever. In the month of January, 1878, a similar epidemic broke out at the same school. In the press and among the public many protests were then made in regard to the insanitary condition of the old buildings where the classes were held. These protests were all the more energetic seeing that, in 1878 as on the present occasion, all the world was invited to visit Paris and the great Universal Exhibition held in that year. Nevertheless, nothing was done, and now after a lapse of 22 years the same school has suffered once more from this neglect. A complication arises from the fact that such establishments are not under the control of the sanitary authorities appointed by the Paris Municipality, but are administered by the Minister of Public Instruction. Fortunately, on the present occasion this conflict of authority has not prevented the adoption of proper measures. The school has been closed, the technical sanitary staff of the Paris Municipal Council has been placed at the disposal of the school authorities, the Ministry of Public Instruction and the municipal administration have worked hand in hand, and the school has been redrained throughout. Further, it was discovered that there were leaking cesspools belonging to two houses in rue Monsieur-le-Prince which contaminated the subsoil at a place where, by gravitation, the filth thus escaping would pass into the subsoil of the college. Thus the alarm caused by the presence of typhoid fever among the pupils of the Lycée Saint-Louis is now allayed. The evil was purely local, affecting the institution and not the town at large.

The consumption of potable water in Paris varies from 187,000 to 212,000 cubic metres per day. There is also a consumption of 350,000 cubic metres of river water per day for the flushing of drains and sewers, the watering of the streets and gardens, and for the supply of ornamental fountains. During the whole of 1899 the supply of water from springs sufficed for the entire population of Paris with but one or two unimportant exceptions where filtered water was given instead, and at least theoretically this filtered water is just as safe. Extensive works are now proceeding for utilising the springs of the Loing and the Lunain. When these works are completed there will be a supply of spring water amounting to 250,000 cubic metres per day, and this will be more than sufficient for some time to come. The spring water actually supplied is derived from the Avre, the Dhuys, and the Vanne. The great question is whether it is possible for these springs to be contaminated. It may be argued that if the water-supply was unsatisfactory there would have been no decrease in the prevalence of typhoid fever. On the other hand, it may also be argued that even if the water-supply was perfect there might still be cases of typhoid fever, because that disease could be produced by other causes than by impure water. As a matter of fact, typhoid fever has not disappeared, but its prevalence has been greatly reduced. Here, again, the same contradictory theories are presented. According to one theory the reduction in typhoid fever is due to the pure water-supply; according to the other theory the water is not above suspicion, and the reduction of typhoid fever is due to general sanitary improvements. In any case, the facts stand as follows. The statistics drawn up by the Prefecture show that there were 1389 cases of typhoid fever notified in 1895, 1243 in 1896, 1342 in 1897, 1288 in 1898, and 4329 in 1899. The deaths from this disease amounted to 700 in 1894, to 270 in 1895, to 260 in 1896, to 250 in 1897, to 255 in 1898, and to 754 in 1899. The increase last year was noticed principally in the months of July, August, September, and October. Much is said about typhoid fever, but the deaths from tuberculosis in Paris amount to about 25,000 annually; it is now generally acknowledged that tuberculosis is a contagious and consequently a preventable disease.

Some 15 years ago there were as many as 5000 and 6000 deaths a year from typhoid fever alone; and to-day not only has the number of cases been greatly reduced but the proportion of fatal cases has also fallen. The mortality from typhoid fever per 100,000 inhabitants amounted in 1871 to 700, in 1882 to 140. The supply of spring water was then greatly increased, and in 1887 the mortality per 100,000 inhabitants from typhoid fever fell to 60, in 1888 to 40, in 1892 to 30, in 1893 to 20. In 1894 there was a slight increase to 28 per 100,000. During the following five years the proportion was only 10 per 100,000, but in 1899 it again rose to a higher figure—28 per 100,000; and, though this may justify some anxiety and suggest the necessity of careful investigation, still it must be acknowledged that a very great improvement has been effected and that there is no comparison between the present state of affairs and that which prevailed not so very long ago. At the same time it must be admitted that it would be very serious indeed were it possible to prove that the recrudescence of typhoid fever which occurred last year was due to the contamination of several of those supplies of spring water which have been brought to Paris at so great an expense and have always been considered so pure. It is claimed that but few large towns are provided with such good water as is Paris. The water-supply of many towns, including part of that of London, depends for its purity on the efficiency of the filtering process employed. It is of the utmost importance, therefore, that a high standard of efficiency of filtration should always be maintained. But the Paris water-supply is not filtered; it comes direct from the watersheds, and so long as there is no contamination of the gathering grounds it should be perfectly pure. It has the further advantage of being delightfully cool during the hot days of summer. The trouble has been that the supply of this spring water has sometimes proved insufficient, especially in the dry season. During the last Universal Exhibition, held in 1889, for instance, it was necessary to cut off the supply from some of the districts of Paris, and this for a period of six weeks. The water from the river Seine was supplied instead and the change was generally followed, if not by an epidemic of typhoid fever, at least by a marked increase of that disease. Therefore, when the authorities are obliged to withdraw the spring water-supply the districts affected are warned. Official posters are affixed to the walls and the inhabitants are urged to boil all the water that they drink. This, however, Parisians are promised, will no longer occur, because there is now not only the additional supply of the Avre, but the waters of the Loing and the Lunain will be ready for distribution before the dry season. Consequently the fear of drinking Seine water instead of spring water need no longer be entertained. The only question, therefore, that need now be considered is whether it is at all likely that one or more of the springs may be contaminated. Attempts have been made to prove that this has actually taken place and that this was the cause of the recrudescence of typhoid fever which was noted last year and at the beginning of this year.

Last year the Academy of Medicine appointed Dr. Thoinot to report on the question. The Prefect of the Seine also nominated a commission to inquire into the matter and it was said that at the bacteriological laboratory of the Montsouris Observatory the Eberth bacillus had been found by Dr. Miquel in samples taken from the reservoir which contains the waters of the Vanne and which is situated at Montsouris. Further, it was said that the authorities of the Montsouris Observatory did not dare to bring this matter to the notice of the Prefect of the Seine because Dr. Thoinot had been removed from a public post on account of his courageous revelations. This latter argument, however, falls to the ground, as the learned professor was removed by the Minister and not by the Prefect of the Seine, who has no authority in the matter. Dr. Thoinot had pointed out that some of the water was gathered from a permeable soil where the natural filtration of the surface waters might not be sufficient. In other districts the water sometimes made its appearance on the surface and at other points disappeared below ground, carrying perhaps some impurities with it. These remarks suggested that perhaps there was insufficient care taken to exclude surface waters, and also that there were pits in which foul water collected. These for the most part have been filled up, but is it certain that there are none remaining? In this respect the law does not arm the authorities with sufficient powers to compel the inhabitants near the water intakes to refrain from digging big pits in which they drain their slops and foul water. As some of the aqueducts are 120 kilometres in length fears might be entertained that it is difficult to protect them efficiently over so long a distance. Yet, in spite of all these doubts and questions Dr. Thoinot in his report says: "I do not criticise the hygiene of Paris and I have never pronounced otherwise than with a feeling of profound respect the names of Belgrand and Alphand, who, at an epoch when no one suspected the mischief that might result from the pollution of water and the importance of pure water, planned those aqueducts which have brought spring water to Paris and rendered it one of the healthiest capitals of Europe; for the water-supply of Paris, such as it is to-day, leaves us nothing to envy either in London or Berlin."

To come from generalities to details, it is argued that though the Vanne waters are collected from the chalk there are fissures which let polluted water through, especially after heavy rains. Last year there was typhoid fever in the town of Sens at the same time as in Paris, and it so happens that the inhabitants of Sens obtain their water by tapping the aqueduct that brings the waters of the Vanne to Paris. Further, out of every 100,000 inhabitants of Paris there were, in 1899, 57 cases of typhoid fever among those who drank the water of the Vanne, 54 cases where the Avre water was supplied, and only 39 cases where the water came from the Dhuys. Among the troops of the garrison of Paris, out of 177 cases of typhoid fever 154 occurred in barracks where the water of the Vanne is laid on. Dr. Thoinot in his report recognised that the spring of the Miroir which is in the watershed of the Vanne might have been contaminated because in the district of Villechétive, situated some 12 kilometres away but on a higher level, there were some cases of typhoid fever and there are some fissures in the chalk. Dr. A. J. Martin who was likewise appointed to report on the question also admits such a possibility and urges that all drains from villages or cultivated fields should be turned aside from the gathering grounds. Already, in 1894, when the deaths from typhoid fever rose from 20 per 100,000 inhabitants to 28, the waters of the Vanne were suspected, but last year this suspicion seemed to be confirmed, for it was said that Professor Miquel of the Montsouris Observatory had found the Eberth bacillus in the water of this spring. At their source,

these waters are admitted to be perfectly pure, but they may be contaminated before they reach Paris. So far back as 1886 M. Duclaux, professor at the Sorbonne, related in his lectures that he had found that the living organisms in the water had increased tenfold by the time it reached the reservoir of Montsouris. Then, again, some doubts have been expressed as to a possible leakage where there are valves that have served to run the Seine water into the pipes reserved for the spring water. Nevertheless, such facts as have been adduced nearly all point to the possible contamination of the Vanne outside and not inside Paris. It has been shown that in 1894, as in 1899, there were cases of typhoid fever in the town of Sens where this same water is supplied, and in Paris during that year it was likewise the soldiers quartered in barracks which received the waters of the Vanne who suffered most, and fears are entertained as to what may occur this autumn. It is true that the prevalence of typhoid fever has decreased. From Jan. 1st to March 17th this year 1053 cases of typhoid fever have been notified, and there were 187 deaths from this disease, but the autumn is the most likely season. The number of cases may then increase considerably if in the interval no effective prophylactic measures have been taken. Such are the principal points of the indictment made against the Paris water-supply, or rather against such portions of that supply as are derived from the Vanne.

It now remains to consider the other side of the question—namely, the replies that have, or may be, made to all these arguments. First, it should be noted that nothing was more likely than an increase of typhoid fever in Paris last year. A great number of workmen and labourers came from all parts of the country, many bringing germs of disease with them, to work at the Exhibition or at the underground railway and other large public enterprises. They tended to overcrowd the poor quarters and to render the labourers' tenements, already far from wholesome, still more unhealthy. Then the digging up of so many streets, and the extensive disturbance of the subsoil were quite enough to account for the increase in the number of cases of typhoid fever; while, on the other hand, had the water been contaminated, the epidemic, if it could be so called, would probably have been much more severe and widespread. Finally, there had been two very dry summers, and this may be the cause of the increase of typhoid fever. In any case such an increase has been noticed, not only in Paris but in a great many other towns both in France and in various other parts of Western Europe. Therefore the phenomenon has not been confined merely to those who have been drinking the waters of the Vanne. In Paris it is impossible to say that a person drinks only the water of the Vanne. Outdoor life is a special characteristic of the Parisian. He constantly frequents cafés in all parts of the town, he has many of his meals in restaurants, and though he may sleep in a quarter only supplied with the water of the Vanne he is frequently drinking in other quarters which receive the waters of the Avre or the Dhuys. Finally it is said that these waters are sometimes mixed in the process of their distribution. Before a definite opinion on this point can be formed, it would be necessary to obtain other information concerning the districts where the Vanne water is supplied, and it is probable that other causes besides the distribution of this particular water may be discovered. In any case, if the water was contaminated it is a mercy and a most extraordinary circumstance that with a population of more than two million inhabitants so little mischief was done. There is a tendency on the part of the public to rush to extremes; and, because it was shown that the water of the Seine often contained the germs of typhoid fever, it was at once imagined that when the Seine water was no longer utilised for drinking purposes that disease would no longer exist. This is an obvious exaggeration, as there are other causes that may occasion this disease. Again, though it is now the law that all cases of typhoid fever are at once to be notified to the sanitary authorities, this duty may be neglected and thus the fever may spread by direct contagion.

All the water supplied to the town is systematically and constantly analysed chemically and bacteriologically by M. Lévy and Dr. Miquel of the Montsouris laboratory, but in face of the complaints made and doubts expressed these gentlemen asked that a committee of eminent experts should be appointed to supervise their work and share their responsibility. This committee was nominated with the Prefect of the Seine as President. It consisted of four municipal councillors, of M. Adolphe Carnot, an engineer and member of the Institute, and M. Janet, a mining engineer, Professor Cornil and M. Riche, members of the Academy of Medicine, Dr Roux of the Pasteur Institute, and others representing the medical and bacteriological sciences. Their first act was to urge upon the Government that the law which protects mineral springs should be applied to the gathering grounds whence towns derive their supplies of ordinary drinking-water. Analysis after all was only an aid; it was not a sure protection, mischief might be done before analysis revealed the presence of pathogenic germs. The real object should be to prevent rather than to detect contamination. M. Janet indicated new and safer methods for collecting the waters of the Loing and the Lunain, he then went and examined the intakes of the Avre, as this was the water which at first had been described as contaminated, and he was instructed to fill up all cesspits that might be dangerous. A map of all the underground watercourses is now being prepared, and more elaborate and perfected methods and apparatus for bacteriological analysis have been introduced at the Monsouris laboratory; but it is felt that analysis should be made on the spot—i.e., on the gathering grounds—and that a portable laboratory should be organised for this purpose. It would require more than a year to examine each small local spring and a scheme for doing this work is now being prepared. After heavy rains, and when it was supposed that the swollen waters of the Breuil were most likely to communicate with and contaminate the waters of the Avre, an examination was made in the locality and it was demonstrated that there was no connexion between these two sources. Dr. A. J. Martin, by inquiries in the neighbourhood also found that while typhoid fever prevailed in Paris the inhabitants of three communes, the most important being that of Nonancourt, were drinking the water of the Avre and there were no cases of typhoid fever among these people. Yet if the waters of the Avre had contained the Eberth bacilli it is not likely that the population of these three communes would have escaped infection.

It has been stated that the inhabitants of Sens suffered from typhoid fever in 1894 because they drank the water of the Vanne which had been contaminated at the springs of the river Miroir. In March, 1894, a big trench was dug round these springs and it was then seen that they did not receive water from any other neighbouring source. It had been said that at Rigny-le-Ferrou there were four cases of typhoid fever, but a closer examination showed that three of these cases were certainly not typhoid fever, and the fourth was doubtful. The insanitary condition of Sens was sufficient to account for typhoid fever. Again, at Theil, near the first spring of the Miroir, a young woman contracted typhoid fever and took to her bed on August 10th. But she had been to Sens on July 27th, where there were cases of typhoid fever. The water of the Miroir was at once examined and found to be pure and no one else in the neighbourhood who drank this water has suffered from the fever. The cesspool of the house where the young woman lived was in a good condition and water-tight. Its contents were carefully disinfected. The body linen of the patient was soaked in a solution of perchloride of mercury limate and boiled, a portable disinfecting stove was brought to the house, everything was purified, and the patient was removed to a considerable distance from the gathering grounds.

Finally, it appears that, in spite of assertions to the contrary, it was a mistake to state that the Eberth bacillus had been found in the waters of the Vanne. On Sept. 9th Dr. Miquel found a microbe possessing many of the characteristics of the Eberth bacillus, but on Sept. 23rd he reported as follows: "On Sept. 7th the water of the Vanne was analysed. All the samples except that of the Miroir produced cultures of the bacillus coli communis. From the waters of the drain of Maroy it was possible to isolate two species of para-coli bacilli possessing most of the characteristics of a culture of the Eberth bacillus. It more particularly differs from the latter because its coagulation in milk is extremely slow, forming a trace of indol in broth cultures, and agglutinates only when relatively large doses are employed (one-half of a cubic centimetre of rabbit serum immunised against the Eberth bacillus)."

It is argued that between the bacillus coli communis and the Eberth bacillus there is a long series of bacteria denominated para-coli bacillus or Eberthiform bacillus. The latter set up fermentation in saccharin fluids, coagulate milk, produce indol, and do not agglutinate under

the influence of anti-typhoid serum. The Eberth bacillus, on the contrary, coagulates milk, does not produce indol, and agglutinates under the influence of the serum. According to Dr. Vaillard, Dr. Remlinger, and Dr. Schneider[1] the Eberthiform bacillus was found in seven out of 13 samples of dust, rubbish, and earth dug out at a depth of one metre and in five samples out of 10 of dejecta from persons not suffering from typhoid fever. The extreme frequency of these bacilli renders it difficult to differentiate the true Eberth bacillus. Dr. Miquel concludes that nothing more suspicious than the bacillus coli communis has been discovered in the waters of the Vanne.

From all these arguments, but especially from the fact that, comparatively speaking, there have not been so many cases of typhoid fever in Paris, there is good reason to believe that the water-supply has not been contaminated with the specific germ of typhoid fever. It is further evident that every precaution practicable under the present laws is being taken to protect the water intakes. Constant watch is kept and, above all, the authorities do not wait till the Eberth bacillus has been found to cut off a suspicious supply. It is because such supplies have been cut off on the mere discovery of the Eberthiform bacillus that the impression arose among the public that the water was contaminated. This has not proved to be the case; but it is satisfactory to learn that radical precautions were taken on mere suspicion. Then the great fact remains that typhoid fever has to a large extent been eliminated from Paris; there is no comparison between the present condition of the capital and that which prevailed only a few years ago. It may be said that though Paris last year suffered, like most other towns, from a recrudescence of typhoid fever, its general sanitary condition is daily improving, and the authorities are better able to cope with epidemic disease than was possible at any previous period of its history. Consequently there is no special reason why doubts about the water-supply should deter strangers from visiting the Paris Exhibition. There must always be some risk where so many people are gathered together, but a more intelligent, active, and widespread attention is bestowed on sanitation generally than was ever shown before. This remark applies more particularly to the question of water-supply, for this phase of sanitation is better appreciated in France than, for instance, that of domestic drainage.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Satire on Sanitary Work in Calcutta.—Sanitary Improvements in Simla.—The Progress of the Plague.—The Famine.—More Plague Disturbances.—General Feeling of Unrest in India.

IT is reported that a lady has undertaken voluntary sanitary work and has come to the assistance of the Calcutta Municipality. She has organised a working-gang consisting of two gully-pit boys, one *bhisti*, two coolies, and six *mothers*. Cleansing work was commenced in some of the plague-infected areas. The houses were cleansed and disinfected, and it is said that by her efforts four cartloads of drain-silt and refuse were removed every day. As is well known the inside as well as the surroundings of some of these *bustics* are extremely filthy. The report of her work states that heaps of refuse were found accumulated which had not been removed for months. Comment is unnecessary.

A great scheme of sanitation is on trial at Simla which, if successful, is likely to have far-reaching results in connexion with the sanitation of Indian cities. Instead of constructing large sewers and carrying the sewage to the stream it has been decided to adopt the bacterial treatment to the sewage. A network of pipes from four to five inches in diameter will collect the sewage from all parts of the station. The pipes will converge to five single trunks. Residents will be required to make their own house connexions. In each outfall gully septic cultivation works will be constructed. Experiments on the Simla sewage at the present outfall have proved that the effluent can be made a water-like, odourless product. The purified sewage will be discharged into the ravines. The new scheme will not only be an immense saving in cost but will embrace the whole station. At present the sewers are limited and those that serve the main bazaar are constructed on the older principles and the gully into which they discharge is very foul, the stream being poisoned for miles. This bacterial treatment of sewage has now been tried at several places in India, but the first conclusive experiments were at the Presidency Jail, Calcutta.

The weekly returns of plague are more satisfactory. With the exception of Aden, where the deaths rose from 73 to 107, plague is either stationary or declining. There were 3365 deaths recorded for the whole of India. Bombay city returns 530, Karachi 398, and Calcutta 393. In the Bengal Mofussil (chiefly Patna, Saran, and Monghyr) the deaths from plague declined to 835. The death-rate in Calcutta is returned at 71·5 per 1000, as against the average of 41 8.

The latest famine returns show a lamentable increase of 156,000, and a total of over 5,250,000, under relief. The provinces and States which show increases are Hyderabad (38,500), Baroda (37,600), Bombay Native States (27,000), the Punjab State and Central Provinces (each 23,000), Bombay and Sind (18,000), and Ajmere-Merwara (10,500). Cholera has broken out in some of the relief camps. It is reported from Nagpore, the Jubbulpore district, and from the Kanelav-tank relief camp.

The disturbances which have taken place lately in connexion with the plague have been more than usually serious. In addition to the Cawnpore riots, to which I referred last week, I now have to record a murderous attack on three soldiers at Shakpur, near Dinapore. While driving along a district road they were met and attacked by a large crowd. Mistaken for plague workers they were seriously injured and the carriage was completely wrecked. All three are in hospital. Again, near Dinapore the disinfecting staff met with opposition. The people made excuses that they did not object to the disinfection itself, but they objected to admit some of the men of the disinfecting party into their houses. The magistrate appears to have ultimately withdrawn the disinfecting party rather than use force to have the work of disinfection properly done. Breaches of the peace have also occurred at several other places. The Lieutenant-Governor has thought fit to direct that local officers shall abstain from employing force for the purpose of carrying out evacuation or disinfection except where forcible resistance is offered to Government servants engaged in the discharge of their ordinary duties.

April 26th.

PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending April 14th show the following figures: remaining, 57; admitted, 29; died, 12; remaining, 62. The total number of cases at this date was 113 and the total number of deaths 38; discharged recovered, 13. Total "contacts" isolated, 576. Cases among "contacts," 5 (see ante).[1]

With the beginning of the past week it began to appear that the difficult task of persuading the people to take a practical share in the rat-killing business and to feel its prime importance had at length been accomplished. A citizens' fund and an association to administer it was inaugurated, but it has hardly begun work as yet. The department has distributed large quantities of poison to municipal bodies and has furnished each with a man to superintend its distribution, to exhort householders to use it, and to specially visit premises on which rats are most likely to be found in numbers—that is to say, stables, provision shops, public-houses, &c. The Government has also announced that it will pay a capitation fee of 2*d.* for every rat brought in and has established men to receive them and furnaces to burn their bodies. The department is also causing large warehouses and the like to be specially inspected by its inspectorial staff, and as soon as it is reported that all necessary improvements have been made, all cleansing done, and all rats killed as far as can be ascertained, it gives a certificate that on such and such a date the premises were in good sanitary condition—a document of much value in relation to country business. Further areas of the infected part of the city have been cleansed, and in every successive block thus

[1] Annals of the Pasteur Institute, 1897.

[1] THE LANCET, May 19th, 1900, p. 1470.

treated it is found that owners of important establishments have in larger and larger proportion dealt as effectively with their premises as their knowledge allowed. One coloured man only has suffered so far—a Chinese; and he was unlucky in that he had come to Sydney only a few days before he fell ill. The Chinese are a secretive people, but their numbers in Sydney are not large and they are well under police supervision, and so far there is no reason to suppose that any case of plague has been concealed by them. The Australian Plague Conference, after holding three meetings in Melbourne, has decided to adjourn to Sydney.

It is singular that *La Semaine Médicale*, which is distinguished for its articles on the epidemiology and prevention of plague, should appear at so late a date as March 7th to be unaware that the disease had reached New Caledonia and for three months had persisted there. News of its presence reached Sydney from no official source, but by a press cable dated Dec. 23rd; there is little doubt, however, that the disease had first occurred considerably before that date. It is no more possible, of course, to fix with certainty on the source of the disease among the rats at Sydney wharves than it has been elsewhere, but considering that Sydney has been in regular and very frequent communication with Hong-Kong from the beginning of the epidemic there, and with the centres which successively became infected from Hong-Kong (except Oporto) without having imported the infection, it seems most probable that the latter was introduced from Nouméa by rats during the latter months of 1899. However that may be, the Néo-Calédoniens desire to ascribe their infection to bags imported to Sydney from Calcutta and distributed thence without disinfection. The imports of bags from that port have always been very great; they are used for holding grains of different sorts, but especially maize, potatoes, chaff, and very largely for ores. The consignments received from two steamers have been fixed upon as those which conveyed the infection; the full facts concerning them consequently have something more than local interest and are as follows. The *Uganda* landed 6234 bales of these bags at Sydney in August, 1899; of this large number only 482 bales were exported, and these went to Brisbane and Bundaberg in Queensland, as well as to Nouméa. The *Fultala* landed 4963 bales in September; of these 1338 were exported, and were distributed among the ports of Melbourne, of New Zealand (two), and of Queensland (two), as well, perhaps, as Nouméa, at all events, 24 bales were transhipped for Nouméa from the *Uganda*, and on Sept. 21st 100 bales went by the *St. Louis* to Nouméa—though whether these included the 24 or were additional to them is not clear. It is true that these calculations have been made with Custom House "transhipment entries," and consequently that more bales may have been exported than they actually show; but in any case the statement as regards New Caledonia is complete. That colony received at most 124 bales, while no less than 9377 bales were retained for use and were used either in New South Wales (which consumed the largest proportion) or at furthest in some other part of Australia or in New Zealand. New Caledonia would therefore have been singularly unfortunate if its infection had been received by this means. But the weight of evidence appears to be against the introduction of epidemic plague by cargoes of whatever kind. In the case of Sydney, at all events, rats first suffered and man only a rather long time afterwards. The probabilities favour the view that the ship-rats were infected by shore-rats, or that some of the latter joined them, and though it may not be impossible that some might survive infection at a distant port to land at the port of arrival in an infectious state, it seems more likely that the disease would entirely kill off the limited rat community carried on any ship in the course of a voyage of three or more weeks. Hence infective rats would be likely to be present on a ship at the port of arrival only after a very short voyage. On this hypothesis China ships from Hong-Kong and other ships from other distant centres of infection were dealt with during all the past six or seven years, and apparently with safety.

April 17th, 1900.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Spread of Small-pox: a Case for Inquiry.

AT a meeting of the Cheshire County Council, held at Chester on May 17th, an extraordinary story was narrated, at the instance of Mr. Francis Vacher, the medical officer of the Cheshire County Council, of the alleged laxity of the port sanitary authorities at Queenborough in the supervision of ships and passengers arriving at that port. Mr. Vacher reported to the council that he had received a letter from Mr. F. J. Roberts-Dudley, the medical officer of the borough of Stalybridge, deploring the importation of small-pox into that borough as a scandal to the sanitary laws of the country, the facts being as follow: Frank Ambler, who had been in Russia erecting machinery for a large Stalybridge firm, left Moscow on April 18th suffering from hæmorrhagic confluent small-pox, the rash being out when he left. He journeyed as follows: Moscow, April 17th, 5.45 P.M.; Warsaw, April 18th, 10 P.M.; Berlin, April 19th, 12 noon; Flushing, April 19th, 12 midnight; Queenborough, April 20th, 6 A.M.; London, April 20th, 8 A.M.; Manchester, April 20th, 3 P.M.; Stalybridge, April 20th, 3.45 P.M.; and he arrived at his home at Stalybridge a little after 4 P.M. A medical man was called in, who at once saw Mr. Roberts-Dudley, and Ambler was forthwith removed to Hyde Small-pox Hospital, where he died on the following morning from apoplexy. Mr. Roberts-Dudley said everything was done at once, including revaccinations, to prevent the spread of the disease. Two cases had, however, since occurred which were removed without delay—one on May 5th and one on May 7th. The man who was removed on May 5th met Ambler in Manchester and travelled with him to Stalybridge. Mr. Roberts-Dudley promptly revaccinated him, but apparently too late to prevent the onset of the disease, which happily occurred in a modified form. Three men travelled with Ambler from London, all of whom were infected, one at Bolton, one at Oldham, and one at Carlisle. Mr. Roberts-Dudley was surprised that this man was not detained at Queenborough, or certainly in London, as on his arrival at Manchester he was so ill that he had to be wheeled on a trolley from one platform to another. On his arrival at Stalybridge he had to be wheeled in a similar manner, and yet no one seemed to have been aware that the poor man was suffering from small-pox, though the eruption was marked. A fatality appears to have attached to this unfortunate case from the outset. Ambler was taken ill on April 13th, and saw a medical man at Moscow who allowed him to go home. The rash appeared during Monday night, April 16th, and yet he was allowed to leave Moscow on the 18th. Mr. Roberts-Dudley deserves credit for promptly notifying the medical officers of health of Manchester, Bolton, Oldham, and Carlisle of the particulars of the case with the result that the individuals who had travelled with Ambler were traced. The Cheshire County Council deserve warm praise for drawing attention to this extraordinary occurrence, and they passed a resolution expressing their opinion that the Local Government Board should take effective measures for preventing the importation from foreign countries of persons suffering from small-pox or other infectious diseases.

The Liverpool School of Tropical Medicine.

The School of Tropical Medicine is about to despatch an expedition to the region of the Amazon to investigate the causes of yellow fever. The expedition will in the first instance proceed to Baltimore. They will afterwards go to Para and other places on the South American coast. Messrs. Elder, Dempster, and Co. and others have generously offered special facilities for the conveyance of the members of the expedition. This is the third expedition organised by the Liverpool School within the last nine months. The school is to be congratulated upon its enterprising spirit. The second expedition is at the present moment in Southern Nigeria, Old Calabar, investigating the subject of malarial fever.

Formation of a Liverpool Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

A public meeting was held at the town-hall on May 18th under the presidency of the Lord Mayor, to establish in Liverpool a branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. Amongst those present were the Earl of Derby, Sir William Mitchell Banks, Sir John Willox and Lady Willox, Mr. A. F. Warr, M.P., Mr. Malcolm Morris, Dr. Arthur Ransome, Alderman Cookson, the chairman of the Health Committee, &c. The Earl of Derby in moving that a branch of the National Association for the Prevention of Consumption and other forms of Tuberculosis be established in Liverpool, expressed the pleasure he felt in obeying the Lord Mayor's summons to attend the meeting. What he understood

they had met for was to take stock, as it were, of a movement which had already been in progress for some time—for a longer time, to our shame, abroad than at home—but which he hoped had now possessed itself of the brain and heart of the country, and which, if it did proceed in the course which seemed to have been marked out for it, would produce an effect upon our population almost greater than any which our medical science had produced up to the present time. The Lord Mayor had told them that there were something like 2000 deaths per annum in Liverpool from this disease. They had reason to believe that a large number of these deaths were preventable, the causes being ignorance and apathy, and squalor of habitations and insanitary conditions generally had tended to make that fatal which was not in itself necessarily fatal. Dr. Arthur Ransome (Bournemouth), in seconding the motion, said that Liverpool was in the van in matters of sanitation, its building by-laws being a model and an example to the rest of the country. He trusted that the citizens of Liverpool would cordially support the aims and objects of the National Association which was making such efforts to cope with a disease which in a decade destroyed more lives than the whole white population of South Africa.—Mr. Malcolm Morris (London), in advocating the motion, said he was not in favour of compulsory notification of cases of tuberculosis, but he thought that voluntary notification to the medical officer of health would act more satisfactorily, especially if the medical officer gave advice as to the best way of treating the disease.—The Earl of Derby was elected the president of the branch and the following were elected the vice-presidents:—The Lord Mayor of Liverpool, the Bishop of Liverpool, the Roman Catholic Bishop, the mayor of Birkenhead, the mayor of Bootle, the mayor of Chester, the mayor of Wigan, the mayor of Warrington, the mayor of St. Helens, the mayor of Southport, Sir John Hibbert, Sir John Brunner, Bart., M.P., the Members of Parliament for Liverpool, and Mr. William Rathbone. Dr. Nathan Raw was elected as honorary secretary and Dr. Thomas R. Bradshaw as honorary treasurer.

May 21st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Torchlight Procession by Edinburgh University Students.

ON the evening of Tuesday, May 22nd, the students of Edinburgh University celebrated the relief of Mafeking by a torchlight procession which was even more successful than such functions usually are. For an hour before the procession was timed to start the streets on the route were thronged with crowds of people, and the students made a good use of this opportunity by collecting all along the streets for the *Scotsman* Shilling Fund for the relief of the widows and orphans of those who have fallen in the war. The students assembled in the quadrangle of the old University and lighted their torches after the arrival of Sir William Muir at a quarter to 9 o'clock. After singing the National Anthem the procession left the quadrangle at a few minutes past 9 o'clock, headed by mounted constables. At some places on the route the crush was unpleasant, but the progress of the procession was orderly throughout. The students surpassed themselves in the variety and ingenuity of their costumes, and while the majority of the torch-bearers walked, a large number were perched on vehicles of all shapes and sizes, motor-cars, lorries, four-in-hands, and donkey-carts being all represented. The ending of the procession was perfectly orderly. After the students had burned their torches in a huge pile on the Castle Esplanade the National Anthem was sung and the gathering broke up about 10.40 P.M. The greatest credit is due to the organisers for the satisfactory and orderly way in which the procession was carried out. The procession was led by the pipe band of the 3rd Battalion of the Gordon Highlanders.

Aberdeen Dispensary attacked by Medical Students.

In connexion with a pro-Boer meeting in Aberdeen on the evening of Sunday, May 20th, a crowd of roughs made a hostile demonstration at the private residence of Dr. A. T. Gordon Beveridge and broke some of the window glass. In spite of a public disclaimer by Dr. Beveridge that he had any party view on the war question, a number of medical students the next morning made an organised and violent attack on the buildings of the Aberdeen Dispensary of which Dr. Beveridge is an official. The institution was defended by all its medical officers and the students contented themselves with smashing a door and singing certain patriotic songs. As Dr. Beveridge had, as a matter of fact, no connexion with the pro-Boer meeting, a large amount of sympathy has been expressed on account of these unwarranted attacks.

Aberdeen and the Sale of Food and Drugs Act.

The Public Health Committee of Aberdeen have fixed the minimum number of analyses to be made under the Sale of Food and Drugs Act, 1899, at about two per 1000 of population, and in view of the increase of work have resolved that an additional inspector be appointed in connexion with the duties.

May 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Presidency of the Royal College of Surgeons in Ireland.

MUCH excitement was recently caused among medical men in Dublin and elsewhere by a most unexpected announcement which appeared in a circular addressed to the Fellows of the Royal College of Surgeons, dated May 21st, stating that Mr. Henry Fitzgibbon was about to become a candidate for the presidency, in opposition to Mr. Thomas Myles, at the coming election on June 4th. The office of vice-president has now been filled by Mr. Myles for two years and, as pointed out by him, the Vice-President has hitherto succeeded to the presidential chair in the natural course of events without any contest or opposition. Mr. Fitzgibbon is an ex-President of the College since 1889. A full explanation of his motives will very soon, however, be made public, for I hear that Mr. Myles has applied for an injunction to restrain Mr. Fitzgibbon from publishing his circular.

Dispensary Medical Officers and their Holidays.

The decision in the recent test cases reported in THE LANCET of May 19th (p. 1472) is, I regret to say, already bearing fruit most unfortunately for the medical profession in Ireland. As an example the following resolution was passed by the Belfast Board of Guardians on May 15th:—

That the clerk be instructed to furnish an account to the Local Government Board of moneys paid to locum-tenents for dispensary doctors in excess of the two weeks' holidays granted by the guardians during the past year. That we request the Local Government Board to recoup the guardians the loss incurred by them owing to the illegal and unreasonable action of the Local Government Board in this matter. We have to refer to the various resolutions adopted by the guardians protesting against the interpretation placed upon the words of the dispensary regulations by the Local Government Board, and also to the fact that the extra two weeks' payment to the locum-tenents was made under protest.

Further, a resolution was passed—and other boards of guardians are taking action on similar lines—approving of the action of the Antrim Board of Guardians (the Torrens-Henry test case) in defending "the rights of local authorities against the unreasonable, high-handed, and illegal orders of the Local Government Board in the matter of holidays to the dispensary doctors, and that we congratulate the Antrim guardians on the satisfactory results of their appeal." At a meeting of the Coleraine Board of Guardians, held on May 19th, Dr. J. T. Creery, of Coleraine, applied for a week's holiday and nominated Dr. W. K. Law as his substitute at a remuneration of three guineas per week. After a prolonged discussion, in which one of the guardians—a lady—said that they were "dragging an honourable profession through the mire," it was ultimately agreed to inform Dr. Creery that the guardians were willing to accept the services of Dr. Law as locum-tenent at two guineas per week.

A meeting summoned by the honorary secretary of the North of Ireland Branch of the British Medical Association (Dr. W. Calwell) was held at the Young Men's Christian Association, Belfast, on May 22nd to consider the question arising out of the recent judicial decision as regards the holidays of Irish dispensary medical men. There was an extremely large and influential assemblage in the crowded room, the medical professors at Queen's College, the teachers in the Belfast School, many members of the medical profession in Belfast, and representatives from all parts of

Ulster being present. Dr. G. Gray, Newcastle (Ex-President of the Branch), occupied the chair and the following motions were carried unanimously:—

1. That in view of the interpretation placed upon Article 28 of the New Dispensary Regulations in Ireland, given by the Court of Queen's Bench, this meeting of the North of Ireland Branch of the British Medical Association desire to express their opinion that the rule as it stands will inflict an injustice and a hardship on the dispensary medical officers, will prove detrimental to the proper and efficient discharge of their responsible and practically unceasing duties to the sick poor, and will tend to be a constant source of friction between the boards of guardians and their medical officers.

2. That this meeting therefore urgently pray the Local Government Board to take such immediate steps as may be necessary to make Article 28 so clear that there shall be no doubt in the future as to its intention, as already avowed by the Local Government Board.

3. That a deputation consisting of the president, secretary, and treasurer of the North of Ireland Branch of the British Medical Association; the president and secretary of the Ulster Medical Society; Dr. Magennis, J.P. (Lurgan); and Dr. Robert Gray, J.P. (Armagh), be appointed to lay before the Local Government Board in Dublin the views of this meeting.

The following gentlemen spoke on the above resolutions. Mr. W. A. McKeown, Dr. F. P. MacLaughlin (Strangford), Professor Byers, Professor Whitla, Dr. H. L. Torrens, Alderman J. Graham, M.D., Dr. J. W. Watson (Limavady), Dr. W. Thomson (Anahilt), and Dr. Samuel Agnew (Lurgan). A hearty vote of thanks was passed to the chairman. It is hoped that this large and representative meeting of the medical profession in Ulster (74 members were present and there were apologies from 43 who were unable to attend) will have its due weight in strengthening the Local Government Board, so that instead of a rule worded in such a vague way as at present—that a dispensary medical officer is entitled to a holiday "not exceeding four weeks"—they will make it clear and definite that the holiday is really meant to be four weeks.

Outbreak of Typhoid Fever in Belfast.

At the Public Health Committee meeting on May 17th the medical superintendent officer of health reported that during the past week 49 cases of typhoid fever had been notified, which was a greater number than in the previous week. Every effort had been made to ascertain the cause of this increase, but without satisfactory result, as many of the cases had occurred in the better class of workers' houses. The reports of the drain tests in these cases were ordered to be submitted and steps were directed to be taken with a view to combating the disease. The death-rate for the week ending May 12th had been from all causes 20·0 per 1000, and from the principal zymotic diseases 1·5, while in the corresponding week of last year the death-rate from all causes was 24·6 per 1000, and from zymotic diseases it was 2·2.

May 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Admission of Lunatics into Asylums.

A CIRCULAR has recently been issued by the Director of the *Assistance Publique* and addressed to the head of every hospital calling their attention to the extreme facility with which hospital patients can be transferred to a lunatic asylum simply at the request of the medical officer in charge of the ward. Supposing such patients become noisy or restless very often they are simply transferred to get rid of them. The rigorous formalities which are demanded by the law before an ordinary person can be placed in a lunatic asylum are reduced to practically nothing in the case of a hospital patient. The medical officer in charge of the ward has simply to sign a transfer order and the patient is removed to the asylum without further ceremony. Owing to this custom the asylums which are already overcrowded have become altogether insufficient. There have been instances of regular abuse on the part of certain surgeons who wanted to get rid of sick persons or old patients who were inconvenient in their wards. Not so very long ago two patients in the midst of an attack of typhoid fever were moved from two hospitals to the lunatic asylum of St. Anne where they both died within 48 hours after admission. A third patient who was comatose was also taken to the asylum and died on the same day. The certificate of the medical man and of the police commissary set forth that he was quite incapable of answering any questions on admission. Under these circumstances the Prefect of the Seine has issued instructions to the director of the lunatic asylum that he is to send back to the hospital whence they come patients who are sent to him in this way by physicians or surgeons.

The Exhibition.

The various classes of exhibits connected with medicine are gradually becoming organised. The exhibit of surgical instruments which is in the Champs de Mars and is being brought together by Professor Berger promises to be one of the most interesting, especially as regards the historical part which is much enriched by the generosity of many collectors. The sanitary organisation of the Exhibition is by no means above criticism. It is true that there is a plentiful supply of spring water for alimentary purposes, but apparently the ambulance stations provided in case of accidents are not numerous enough and are too far apart the one from the other. Then, too, owing to the crowds in the relatively small space allowed for the circulation of the sightseers any panic would be the cause of injury to a number of people whom it would be difficult to attend to immediately. It is interesting to note that the space allotted for circulation of sightseers as compared with that allotted to edifices has decreased with every exhibition. That of 1889 occupied 960,000 square metres, of which 290,000 were occupied by edifices. That of 1900 occupies a space of 1,000,000 square metres, of which 460,000 are occupied by edifices, and the number of exhibitors is this year 140,000 instead of 95,000 as in 1889. Among the innumerable offers held out to foreigners by commercial bodies of every kind which desire to make their fortunes this year there is one, simply grotesque, which is of interest to the medical profession. It is a quack establishment, of which so many exist in Paris under the deceptive name of "institute," which announces in a lay journal that at its offices the visitor will find at any hour of the day doctors of medicine speaking every language. Another, in return for a subscription which will last for one week, one month, or 10 months, the sums varying from 10 francs to 75 francs, offers to provide any medical, surgical, or dental attendance that may be necessary.

May 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Researches on Carcinoma and Syphilis.

A HIGHLY interesting communication has been made to the *Centralblatt für Bacteriologie* by Professor Schüller who has discovered in malignant growths—sarcoma as well as carcinoma—corpuscles of a very characteristic type in different stages of development. According to his description these corpuscles were of a round or oval form, their size being three times that of the red corpuscles of the blood and their colour golden-yellow or brownish; they refracted light strongly. They consisted of a solid, resistant, refracting, light-coloured capsule containing protoplasm of a darker hue. Under certain circumstances the capsule showed not only different strata but also stripes. On the surface of the capsule there were pores. The protoplasm was of a granular texture in some cases. In cultures there were also organisms, the capsules of which had burst and the escape of the protoplasm had left the capsules empty and folded. In living cultures ciliated protuberances were to be seen penetrating through the pores. Unstained specimens hardened in alcohol and cleared in oil of lavender were used for microscopical examination. The organisms were distinguished by their characteristic colour and brightness. They had been found by Professor Schüller in every specimen of carcinoma and sarcoma, both fresh and hardened, which had been taken from malignant growths of the tongue, the lips, the rectum, &c., and from melano-sarcoma. He had also made cultures of the organism, for which purpose only recent growths, not yet degenerated, were used. He cut pieces from the centre of the growth and kept them in glass vessels at the temperature of the human body, the tissue of the growth itself being used as the culture medium. When the culture was successful after a few days grey droplets were seen which, on microscopical examination, were found to consist of small bodies of the above-described species; in some instances the capsule contained protoplasmic substances, in others there were folded capsules without protoplasm. He had endeavoured to infect animals with these organisms, but the experiments were not yet finished. The organisms obviously

belonged to the protozoa. He somewhat cautiously suggested that there might be a connexion between these organisms and the pathology of carcinoma. Another communication by Professor Schüller to the same journal was devoted to organisms discovered by him in every stage of syphilis, from the primary chancre to the tertiary form and in hereditary syphilis also. In primary chancre he had found very small organisms with a double-lined capsule and brown protoplasm, their shape being generally oval. They were best seen under a magnifying power of 1000 diameters. In chancre, when the specimen had been stained in a solution of iodine and iodide of potassium, fine canals were seen going from the surface to the interior filled up by corpuscles of the form of conical bullets in which the above-described micro-organisms were situated. They were present in fresh tissues only in every instance and were especially numerous in hereditary syphilis. Cultures were less successful than in the case of malignant growths, especially those from chancres, whilst cultures from the lymphatic glands gave a better result. The development of the cultures was very similar to that of malignant growths. Professor Schüller believed that his discovery was of great importance in connexion with the etiology of syphilis. His observations, if verified by other pathologists, would certainly cause a great sensation. It must, however, be remembered that in carcinoma and syphilis micro-organisms alleged to be the cause of the disease had already been described by several authors, but hitherto all these discoveries had ended in disappointment, and the medical profession would therefore do well not to be too sanguine when announcements were made relative to the etiology of cancer or syphilis.

Researches on Vaccine Lymph and Foot-and-Mouth Disease.

Dr. Siegel, whose observations of foot-and-mouth disease in the human subject have been already mentioned in THE LANCET,[1] has written to the *Deutsche Medicinische Wochenschrift*, mentioning that he has discovered several classes of micro-organisms in the vaccine vesicles of vaccinated calves and also in the vesicles of foot-and-mouth disease in cattle. The first variety of these organisms is described by him as consisting of spherical or oval bodies resembling cysts, of a brownish colour, and from 10 to 18 μ in diameter. The capsule has two layers, an external one with radiating stripes and an internal smooth one. The capsule is sometimes torn. The organisms of the second group are smaller, being from 6 to 8 μ in diameter; they are lighter in colour and are covered with a visible membrane. Sometimes they are granular and it is very likely that they are contained in the capsules of the first-mentioned group. The third group consists of organisms belonging to the second group broken up into a great number of very small round corpuscles which are dispersed somewhat uniformly throughout the specimen. The diameter of the smallest organisms is hardly more than $\frac{1}{4}$ μ, their colour being yellow. There is no difference between the organism detected in the vaccine vesicles and in foot-and-mouth disease. The above-mentioned large cyst-like bodies are rather rare, whilst the small corpuscles are very numerous. It has not been possible to stain them and they are very resistant against acids and alkalies.

May 22nd.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Assouan Reservoir.

ASSOUAN has long been famous to tourists for the first cataract met with in going up the Nile and as the site of the Ptolemaic temples of which the best known is Philæ. Here may be deciphered no less than six languages cut on the temple wall, hieroglyphic in abundance, some demotic (being a copy of the famous Rosetta stone), many Greek lines, Latin inscriptions in honour of the Roman Cæsars, French names of generals who pursued the Mamelukes thus far in 1798, and lastly a memorial tablet in English to perpetuate the fame of those of the Heavy Camel Brigade who fell in 1884 while unsuccessfully struggling to relieve Gordon at Khartoum. Readers of a medical journal may perhaps be reminded that at Philæ there was a celebrated temple in honour of Æsculapius, dating from the liberal times when anatomy was a permitted study, when Herophilus and Erasistratus became famous as dissectors, and when Alexandria was the home of the museum and the centre of the world's science, including medicine. Herophilus is said to have described the best quality of a physician as "the power to distinguish the possible from the impossible." This is also true to-day of the world's engineers, and one cannot but wonder what the immortal shades hovering about Philæ think of the five years' work which has for its object the damming of the great river which for countless ages has leapt joyfully through the granite rocks. The work of the last two years has been so far a great success, and now at lowest Nile all the eastern channels are stopped and a huge granite wall is rising like a mighty breakwater. An army of 7000 Egyptians is working at a high rate of pay and about 500 Italians are cutting granite, because they do it so much more quickly and better than the natives. All are under the orders of 150 British artizans, and practically all the engines and railway plant and huge cranes have come out for the work from England. And the present motto is "Hurry!" because in three months the Nile flood will be down and then no more can be done to strengthen foundations and to eat out the grey granite which is not considered good enough to take part in a work which will some day rival the Pyramids and the Suez Canal, and stand, whatever may happen, as a permanent monument of the English occupation of Egypt. The low Nile of this year is a nuisance to everyone but the engineers at Assouan, because it enables them to delve down sometimes 100 feet to look for faults in the rocks and to blow up with dynamite any masses of doubtful consistency. At a quarter to 12 every morning a warning syren sings and everyone scuttles away from the works to lunch and safety, with the exception of half a dozen firemen who remain behind. At noon the syren is again heard and from a vantage ground in the distance the men can be seen running nimbly about the abysses to light the fuses to which the long dynamite cartridges are attached. And then is heard a sort of artillery *feu de joie*, and for ten minutes at intervals masses of granite hurtle through the smoke and plunge into the pools of water yards away. And all this work must go on every day except Sunday and, except during the three months of the Nile flood, until three more years are over, and the Europeans must be content to live without luxuries in mud-brick huts, the walls of which are often made three feet thick. For this is the only way to keep out the sun by day and to get comparatively cool nights in a tropical summer where the midnight temperature is often as high as 100° F. But the men are healthy enough and those who do not drink and who wear huge helmets stand the hot sun very well.

The Aird Hospital.

Messrs. Aird and Co. established a hospital soon after the work began and they have been generous in carrying out all practical suggestions made to them. Dr. Schmidt, an American surgeon, organised the building of several isolated huts and prided himself on having a perfect operating theatre complete in every antiseptic detail. Now, after an attack of typhoid fever, he has resigned and his place has been taken by Mr. Arthur White, late of the medical staff of the Uganda Protectorate. The assistant medical officer is a Syrian who was educated in London. The bulk of the patients, as might be supposed, are suffering from injuries or from the effects of dynamite explosions, nearly all due to the carelessness of the workers. Familiarity with blocks of granite or with powerful cranes breeds contempt, or the dynamiter tries to dig out an unexploded fuse to save himself the trouble of boring a new hole for a second cartridge. The typhoid fever hut was empty when I visited the hospital, but in the isolation huts there were one case of erysipelas and two cases of small-pox. One of the latter was a mechanical engineer, responsible in his spare time for making ice and soda-water for the camp. Unfortunately he had declined to be vaccinated and he has now lost his life in consequence. During the last month more than 600 natives have willingly been revaccinated, and I now hear that the engineer's death has converted the rest of the objecting Europeans.

Plague at Port Said.

Just two years ago Egypt was startled by hearing of a case of plague at Suez on a steamer in dock, but fortunately it was apparently the first sporadic case and thanks to the great care of Dr. J. E. Cresswell there were no further

[1] THE LANCET, April 6th, 1895, p. 901.

patients. Then, again, last May plague was discovered at Alexandria, but not until it had been imported there for two or three weeks. Everyone now knows that it lasted six months, but never spread through any one household, and, best of all, never left Alexandria, with the exception of two individuals who conveyed the disease to the neighbouring town of Damanhour. This result, as already pointed out in these columns, shows that there is no mystery about plague, but that it can be stamped out like any other infectious disease or like a pest of locusts or black beetles, provided only that the disease be discovered early, that the sanitary measures be thorough and long continued, and that the Government and the civil population work loyally together to rid the town of the unwelcome intruder. Now for the third year plague has reappeared in its old Egyptian home, and we all feel that we know more about it and the general public has at last some confidence in the English sanitary advisers. Though the first case was not discovered until the beginning of May it is now considered probable that there have been dropping cases at Port Said since the end of March. The Greek practitioners seem to have been content to certify as "influenza" a few obscure cases of fever accompanied by swollen glands. It must here be remembered that they have had no clinical acquaintance with plague and from ignorance did not inform the local sanitary office of the early cases. Now that there have been eight official cases with four deaths everyone is working hard to prevent the growth of an epidemic. The work on the spot is under the control of Mr. Graham, aided by Dr. Bittar, as bacteriologist, and similar measures to those employed last year in Alexandria are being carried out. The treatment of the plague which was successful in a city of 380,000 inhabitants ought to answer at Port Said where the population is only 42,000. Moreover, in Port Said there are wider streets, less lofty houses, and a greater circulation of fresh sea air. It is satisfactory to know that the present mortality of Port Said is rather under the usual spring rate.

Cairo, May 7th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Isolation for Tuberculous Patients.

THE crusade against tuberculosis is assuming vast proportions in America. The burning question of the hour here now is as to whether isolation is a necessity for consumptives and especially for poor persons suffering from the disease. The majority, perhaps, of the physicians of the United States are convinced of the need of both notification and isolation in cases of tuberculosis. They believe much more firmly than the medical men of Great Britain in the infectiousness of pulmonary consumption which they regard as possible to stamp out. In Massachusetts and in New York State this belief has been carried into practical effect. Massachusetts has erected a sanatorium for the treatment of dependent consumptives and New York city is about to erect one. At a joint meeting of the Philadelphia County Medical Society and the Pennsylvania Society for the Prevention of Tuberculosis held in January last many eminent medical men from different parts of the country spoke in favour of State aid for poor consumptives. Dr. James C. Wilson said that the remedy for preventing the spread of the disease amongst the poor was a very obvious one. It was based upon the simplest principles of preventive medicine. It demanded the fulfilment of a public duty. "State and local Governments provide and maintain institutions for the care of the poor, and especially for the care of the sick poor, but the consumptive of the labouring class, when he most requires help for himself and safeguarding for the public, is usually neither sick nor poor. Before long he is both, and is also the cause of sickness and poverty in others. Then he is commonly past help, for at no time is the almshouse or the general hospital the place for him. Asylums are provided for the insane in order that the curable cases may be properly treated, the incurable suitably detained, and society protected against the violent or the homicidal. Hospitals are established for contagious diseases incidentally that the sufferers may be cared for, but primarily for the protection of the people and the prevention of epidemics. Yet consumptives whose need is sorer as their numbers are greater, seek in vain for help. The establishment of special sanatoria to which the incipient cases can be sent and special hospitals for advanced cases is the solution of the problem." There can be no doubt as to the need of special hospitals for advanced cases of tuberculosis among the poor, but the difficulties in the way of establishing sanatoria for incipient cases are very great if not insurmountable.

Small-pox in the United States.

Small-pox is extremely prevalent in many parts of the States, and especially in the States of Illinois and Indiana. In fact, the disease has been present in Indiana for a period of about two years. The malady in both these States is not of a virulent type, and for that reason many cases of mistaken diagnosis have occurred. In order to guard against this unfortunate error, which, it is needless to remark, might be attended with very serious consequences, the Illinois State Board of Health have published a circular informing medical men how to differentiate between small-pox and chicken-pox—the malady which is of course most often confounded with small-pox in a modified form. The chief rule laid down by the Illinois Health Board to ensure a correct diagnosis is that chicken-pox rarely attacks an adult, and the physician is warned to regard with great suspicion any varicella-like eruption in a grown-up person. It may not be small-pox, but it is extremely unlikely to be chicken-pox. Small-pox in several of the States has undoubtedly been disseminated by unvaccinated children who attend the free schools. The State Board of Health of Indiana passed and enforced regulations debarring such children from attending school. Their right to do so was disputed and the upshot was that it was made a test case. The Supreme Court of Indiana has taken the common-sense view of the matter and has sustained the action of the Health Board. It concludes its judgment with the following sensible words:—"It is a well-recognised fact that our public schools in the past have been the means of spreading contagious diseases throughout an entire community. They have been the source from which diphtheria, scarlet fever, and other contagious diseases have carried disaster and death into many families. Surely, then, there can be no substantial argument adverse to the reasonableness of an order which is intended and calculated to protect in time of danger all school-children and the families of which they form a part from small-pox or other infectious diseases." Vaccination is at the present time much more thoroughly carried out in America than in Great Britain, and doubtless it is due to this fact that the small-pox epidemics here have, as a rule, been of a mild form. As many of the medical journals, however, point out, this is no reason for lax methods in dealing with the disease, which may at any time develop into a virulent type, especially in the unvaccinated. As it is, a considerable amount of interruption to travel and depression of business has been occasioned by the numerous outbreaks. In all cases in which there is any doubt every necessary precaution should be taken.

Report of the Chief Surgeon of the Department of Matanzas and Santa Clara, Cuba.

This annual report has recently been published and it gives an interesting account of the work done in that portion of Cuba since its occupation by the Americans, thus affording an instructive object lesson of what may be effected in a short time by efficient sanitary measures vigorously carried out. As the report says, "When the United States army first landed in Cuba the town and cities in this department were in a most deplorable condition; destitution, hunger, disease, and death were everywhere in evidence. Such public institutions as were in existence were overcrowded to an unprecedented extent, and words fail to describe the utter misery of the wretched, starving inmates." After describing in detail the measures which were taken to remedy this state of affairs the report goes on to say: "It is gratifying to be able to report that, according to present indications, the sanitary condition of the two provinces in this department is excellent." The death-rate is greatly decreased, starvation is absent, and yellow fever has been almost completely suppressed. It is, however, pointed out that the present methods of sanitation are but the forerunners of much that remains to be done, and that unless a permanent, scientific, economic, and efficient system be established the work already accomplished will, in great part, bear little more than temporary fruit. Speaking of the health of the troops in the departments of Matanzas and Santa Clara the report says that it has been excellent, and it further remarks: "It would not be inappropriate to state that the

condition of almost perfect health in this command and its freedom from typhoid fever is the natural sequence of military sanitation systematically and thoroughly applied." All this goes to show that under good hygienic conditions white men can live in good health in tropical countries.

May 12th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Alleged Breach of Ethics: Resignation of the Council of the Victorian Branch of the British Medical Association.

THE medical profession in Victoria has been stirred most deeply by a charge of breach of ethics brought against a prominent Melbourne surgeon, Mr. H. M. O'Hara, F.R.C.S.I., and investigated by the Council of the Victorian Branch of the British Medical Association, of which he is a member. A member of the Branch wrote to the Council enclosing a circular which he had received with reference to a patent called "Silenette" to be used as a preventive of conception. He stated that Mr. O'Hara was reported to be connected with the company issuing the circular and selling the patent, and asked the Council to investigate and deal with the matter. The Council did so and found by an examination of the sworn and attested statutory declarations, filed in accordance with the Companies Act at the office of the Registrar-General, that the Silenette Company was registered on July 9th, 1898, with the object *inter alia* "of purchasing and acquiring from Mr. O'Hara the trade mark "Silenette" and all his proprietary rights and interests therein," and that the company took power "to issue shares paid up in full in payment for the trade-mark and proprietary rights and interests." They found also that on July 18th, 1898, Mr. O'Hara signed an agreement by which he sold the trade-mark "Silenette" and all proprietary rights and interests therein, and agreed to take 2000 shares in the company fully paid up to £1 in payment for the same. On August 12th he endorsed this agreement to the effect that the syringe was included in the sale. Several subsequent lists of shareholders and allotments of shares were filed showing that shares were transferred and additional shareholders added to the list, but in all of them up to the last, issued on Oct. 19th, 1899, Mr. O'Hara's name appeared as the holder of 2000 fully paid up shares, the consideration for which was his sale to the company of the trade-mark "Silenette" and his interests therein. The Council then wrote to Mr. O'Hara enclosing a copy of the letter of complaint and asking for an explanation. His reply was: "I have not now and never had any interest in the Silenette Company either directly or indirectly." He explained, however, that a Mr. Loxton had shown him the syringe and powder, since known as "Silenette," which he (Mr. O'Hara) had used in his practice as a vaginal antiseptic and had suggested some improvements on them, and that Loxton and a solicitor named Montagu Cohen had met at his house and the formation of a company to sell the "Silenette" was talked over. Subsequently Loxton told him that a company was being formed and it would be necessary for him to surrender to the company any rights he might be supposed to have in the invention. To oblige Loxton he agreed to this and subsequently signed a legal document without reading it, believing that it merely stated what he had agreed to do, and he did not know that any shares were allotted to him. Subsequently Loxton told him that 2000 shares had been allotted, and he told Loxton and also told Cohen, who combined the offices of director of the company, solicitor to the company, and solicitor to Mr. O'Hara, that he could not take the shares or be interested in the company in any way, as to do so would be contrary to the etiquette and rules of the British Medical Association and of his College. The Council of the Victorian Branch of the British Medical Association were not satisfied with this explanation. When the company applied for a patent for the invention it was opposed by a chemist named Simpson, and the Council had an attested copy of an affidavit by Simpson filed at the Patent Office in which he swore *inter alia* that he had had an interview with Mr. O'Hara with reference to making improvements in the invention known as Silenette, and in which Mr. O'Hara stated that he was the inventor of the appliance. Mr. O'Hara had also made a rebutting affidavit in support of the application for the patent, in which he denied Simpson's statements. Simpson made a further affidavit re-affirming them, and the patent was refused. In view of all these statutory declarations the Council unanimously decided that Mr. O'Hara was guilty of a gross breach of ethics, and notice of motion for his expulsion from the Branch was given. He was informed of this notice and was asked to attend in person to answer the charge and to bring any witnesses or any evidence which he chose. He did so and practically re-affirmed his previous explanation at greater length, and he brought Loxton and Cohen as witnesses. Loxton confirmed all that Mr. O'Hara had said and made a statutory declaration to that effect, but in cross-examination he made the admission that when he brought the appliance under the notice of Mr. O'Hara he knew of no other use for it than as a preventive of conception. Cohen stated that it was his fault that the agreement was made out as it was, as he understood at first that Mr. O'Hara was the inventor, and only found out that he was not when the patent was applied for. Mr. O'Hara had told him that he could not take the shares. He was not able to explain how it was that, as Mr. O'Hara's solicitor and director of the company, he did not see that his client's name was removed from the list of shareholders in the company, and signed statutory declarations which, according to his statement now, he knew to be false; and when subsequently asked to make a statutory declaration affirming his statement to the Council he declined. The Council held many meetings (eight in all) to discuss the matter and the course to be pursued, and eventually decided by the necessary three-fourths majority that Mr. O'Hara be expelled. This decision had to be confirmed by a three-fourths majority of the members present at the next ordinary meeting of the Branch. This was held on March 21st, and was one of the most largely attended meetings of the Branch ever held. The President, Mr. G. A. Syme, detailed the proceedings of the Council and read out *verbatim* the evidence before it. In officially moving the confirmation he stated that the Council had performed a very painful and very unpleasant duty which it could not avoid and had endeavoured to take as lenient and charitable a view of the case as possible, but could see no other way of carrying out the main object of the British Medical Association—the maintenance of the honour of the profession—especially as a member had been recently expelled for a less offence. The motion was seconded by Dr. G. Rothwell Adam, the lecturer on obstetrics at the Melbourne University, not a member of the Council, who said that in the face of the sworn documentary evidence put before the members no other course than that adopted by the Council was possible.—Dr. Weigall, Dr. Macansh, and Mr. G. Cuscaden spoke against the motion. The first speaker maintained that no breach of ethics had been proved. The others admitted Mr. O'Hara's culpability but thought the penalty too severe.—Dr. J. W. Springthorpe supported the action of the Council, emphasising the fact that Mr. O'Hara's defence was not confirmed by satisfactory evidence. A division was taken, with the result that 44 voted for the confirmation of the expulsion and 34 against it. As the necessary three-quarters majority was not obtained the decision of the Council was not ratified.—The President then addressed the members and said that as the Branch had not, in the opinion of the Council, fulfilled its first duty of maintaining the honour of the profession the members of the Council tendered their resignations as members of the Branch. The secretary and treasurer would hold office for a time to carry on the affairs of the Branch till their successors could be appointed. Since the meeting many members have resigned. It is understood that the late Council will send a statement of the proceedings to the Council of the British Medical Association in England in justification of their action, and it is probable that some members of the Branch will make a charge against Mr. O'Hara *de novo* to the Council of the parent Association.

April 7th.

ROYAL MEDICAL BENEVOLENT COLLEGE: RESULT OF THE ELECTIONS.—At the annual general meeting held at the office of the college in Soho-square on May 25th the following candidates for pensionerships and foundation scholarships were declared to have been duly elected:—Pensionerships: Annie Blick, 7304; John Charles Bonnett, 6851; Elizabeth M. Solly, 6457; William Dewsnap, 5978; Margaret Keith, 5303; Ellen Wilson, 4814; and Anne W. Osborne, 4298. Foundation Scholarships: Edward R. L. Warren, 5493; Gerald Percy Adams, 5327; Charles R. Hamilton, 4442; and Cuthbert W. Ellison, 4429.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THE sixty-sixth session of the General Council of Medical Education commenced on Tuesday, May 22nd. The results of the first two days' work of the Council confirm our forecast of a somewhat prolonged sitting. Two members are absent from their places. Dr. D. J. Leech of Manchester, to the grief of his colleagues, is absent on account of ill-health. Sir William Thomson, like so many other distinguished Irishmen, is at the "front." There are two new members, Sir Hugh Reeve Beevor, Bart., M.D., F.R.C.P.Lond., representing the Society of Apothecaries, and Mr. William Henry Power, F.R.S., representing the Crown.

The opening address of Sir William Turner showed how many and important are the subjects to be discussed by the Council. His remarks on the loss sustained by the Council through the sudden death of Sir Richard Thorne were felt to be eloquent with the eloquence of sincerity and sympathy, and they well expressed the sentiments of the whole Council. He testified to the ability and usefulness of Mr. Brudenell Carter as a past representative of the Society of Apothecaries. Sir William Turner spoke impartially on the various important subjects which have to be settled by the Council at this meeting. Perhaps the one which chiefly interested him was the completion of a Bill to be introduced into Parliament for obtaining additional powers for penal and disciplinary purposes, in the preparation of which he has acted with much ability. Only those who know the numerous idiosyncrasies of the General Medical Council can realise the difficulty of bringing all the members into line for common purposes of discipline. And this is the feat which the President has achieved.

On Wednesday it looked as if the whole Midwives Bill and all the questions which it involves were going to be rediscussed. But in the end the Council contented itself with debating the points raised in the report of its Midwives Committee, and specially the best means of securing that limitation of the midwife's function to attendance on natural cases which all are agreed should be secured in any legislation.

Honours accumulate on the members of the General Medical Council. It should be an advantage to the assembly that one of them, Sir John Batty Tuke, has since the last meeting become a Member of Parliament. The Council should feel the convenience of having a member in Parliament. The list of birthday honours included the name of Dr. Hector Cameron, the representative in the Council of the Faculty of Physicians and Surgeons of Glasgow, of which Corporation he is President, who has been granted a knighthood by Her Majesty. Dr. Cameron is greatly respected in the Council, and the members greeted the announcement of the event with hearty expressions of satisfaction.

Several members of the Committee of the Council of the British Medical Association appointed to consider and report on the question of a Conciliation Board met the Medical Aid Associations Committee of the General Medical Council on Tuesday. The conference was presided over by Sir William Turner.

The President of the Royal College of Physicians of London and Mrs. Church gave two receptions—on Tuesday and Wednesday evenings respectively—which were largely attended by members of the General Medical Council and other members of the profession and their wives.

TUESDAY, MAY 22ND.

THE sixty-ninth session of the General Council of Medical Education and Registration was opened to-day in the Hall of the Council, Oxford-street, London. All the members were present save Dr. Leech, who is ill, and Sir William Thomson, who is at Bloemfontein in charge of the Irish Hospital there. Sir WILLIAM TURNER, President of the Council, occupied the chair.

Introduction of New Members.

Dr. PYE-SMITH introduced to the President of the Council Sir Hugh Reeve Beevor, the successor of Mr. Brudenell Carter in the representation of the Society of Apothecaries of London.

Mr. BRYANT introduced Mr. William Henry Power, principal medical officer of the Local Government Board, the Privy Council nominee in succession to the late Sir Richard Thorne.

The President's Address.

The PRESIDENT began his address by alluding to the great loss sustained by the Council through the sudden death of Sir Richard Thorne while in the prime of life and activity. He also mentioned the excellent work done upon the Council by Mr. Brudenell Carter as representative of the Society of Apothecaries of London. He then welcomed the new members of the Council, Mr. William H. Power, F.R.S., principal medical officer of the Local Government Board, who has been appointed to a Crown seat upon the Council in the room of his late chief, and Sir Hugh Beevor, Bart., the new representative of the Society of Apothecaries. Having announced with regret the resignation of Mr. F. W. Farrer of his position as solicitor to the Council he continued: "The experience which I have gained as your President during the past two years has led me to think that improvements might be made in the Standing Orders which regulate procedure during our debates. After consultation with the chairman of the Business Committee amendments have been framed, the object of which is to give more specific instructions for the conduct of business, both as regards motions and amendments. An additional Standing Order has also been proposed on which I desire to give a few words of explanation. By our present orders we can carry a motion, or decline to carry it, or amend it when under discussion, or, if the Council does not wish to vote on the question, we can pass to the next order of the day. We have, however, no specific order to enable the Council to close a debate and at the same time to take a vote on the subject under discussion, for though the 'previous question' closes a debate it also precludes the Council from expressing an opinion on the merits of the question then before it. You will be asked, therefore, to take power to close a debate either on a motion or an amendment, and that the proposal for the closure shall be made and seconded without debate, and shall, unless the President or Chairman shall rule otherwise, be put forthwith; should the proposal be carried the motion or amendment shall at once be voted on. The proposed amendments in the Standing Orders were submitted to the Executive Committee in February and recommended by it to the Council. They were embodied in the Minutes of that Committee, have been in the hands of Members of Council for more than two months, and time has thus been given for their consideration. A report on the steps that I have taken since our last session towards obtaining additional powers for penal and disciplinary purposes, both for the Council itself and for the medical authorities represented on it, will be placed in your hands. In conjunction with our legal advisers a short Bill has been prepared to carry out the object which the Council has in view, and in which are embodied the clauses as adjusted in consultation with the medical authorities and submitted to, and approved by, the Council in December last. Acting on a suggestion made to me through the Privy Council, the representatives of the Universities in the House of Commons have been requested to support the Bill. I am happy to state that members for the Universities of Oxford, Cambridge, London, Dublin, and of the Scottish universities have acceded to my request. A copy of the Bill will be supplied to each member of council.

The Midwives Bill, introduced into the House of Commons

early in the session, has passed the second reading and been amended by the Standing Committee on Law. Your committee appointed to watch legislation on this subject has held two meetings and has submitted amendments to the Lord President of the Privy Council for his consideration. A report of its proceedings has been prepared and will be brought before you. The question regarding practice in Italy by British practitioners, to which your attention has been called on former occasions, has entered on a new phase. The Lord President of the Privy Council has intimated to the Council that a deputation of British practitioners resident in Italy has communicated with the British Ambassador in Rome, and has assured him that in their opinion the privileges afforded them in Italy in regard to practice are just and reasonable. Following upon this communication the British Ambassador has asked the Foreign Secretary to ascertain if the President of the Privy Council would be prepared to admit Italian doctors in Great Britain to reciprocity of medical practice. We are further informed that at the proper time the Privy Council will be prepared to apply Part II. of the Medical Act, 1886, to Italy. It will be observed that in the correspondence the expression reciprocity of medical practice as between foreign doctors and our countrymen has been employed. It should, however, be kept in mind that the word reciprocity does not occur in Part II. of the Act. There is, indeed, nothing in the Act to show that in the arrangements to be made between this country and a foreign country identity of privilege should be provided for. It is left to Her Majesty in Council to decide if the foreign country has accorded to British practitioners such privileges of practising in that country as to Her Majesty may seem just, and to declare by Order in Council that this part of the Act is to apply to a particular foreign country. After the order is issued, and before registration on the Foreign List can be effected, the Act requires the Medical Council to decide—(*a*) whether the diploma to be registered furnishes a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery; and (*b*) whether the applicant is of good character and is by law entitled to practise in the foreign country whose diploma he possesses. The Council will recollect that Mr. Muir Mackenzie has already advised that practitioners who obtain the registration of their names in the Foreign List of the Medical Register become entitled to all the privileges which are possessed by British medical practitioners and that there is consequently no power to restrict their practice in the United Kingdom to their own countrymen. In view of the present position of this question and of the difficulties which surround it the Council will probably desire to express an opinion on the matter as it is now presented to us.

The possibility of obtaining an amendment in the law regarding death certification has not been lost sight of. The lamented death of Sir Richard Thorne suspended for a time communications which had been begun on this subject; but we are assured that before next session of Parliament the deputation appointed by the Council will be given the opportunity of stating our case to the Government. In accordance with a resolution of the Council of December last the Education Committee has obtained from the experts engaged by the Council to assist the committee in their inquiries into the Preliminary Examinations to be passed by intending medical students an elaborate report which sets out in full the reasons which had guided them to the conclusions to which they had come in their previous report. We shall expect to receive from our committee a communication on this subject, and on the recommendations made by the experts for reform in the conduct and standard of these examinations. In December last I communicated to the Presidents of the Royal Colleges of Physicians and Surgeons in London the resolution of the Council to adhere to its regulation of June 7th respecting the registration of medical and dental students and invited the Colleges to take the matter again into consideration. A few weeks ago I received from the Colleges replies to my letters, in which they intimated that they adhere to the resolutions previously adopted by them and communicated to the Council (Minutes, Dec. 4th, 1899). They have forwarded copies of a memorandum prepared by the Committee of Management of their Conjoint Examining Board for the information of the Colleges, in which they review the claim made by the Council that the universities, schools of medicine, and scientific institutions recognised by a licensing body should be approved by the Council. Through the courtesy of the Colleges I have been able to supply each member of the Education Committee with a copy of the memorandum. The Council awaits a further report by the Education Committee on this matter." The President then said that reports from the Examination Committee, the Personation Committee, the Pharmacopœia Committee, and the Committee on Medical Aid Associations would be laid before the Council, and concluded with the following sentiment: "I would express the belief that as earnest men of business actively engaged in the duties of our profession, conscious of the value of time and words, we shall apply ourselves to the work before us and not indulge in the academic discussion of questions not ripe for a practical solution."

On the motion of Dr. MACALISTER, seconded by Dr. PETTIGREW, the President was thanked for his address and invited to allow it to be printed in the Minutes of the Council.

Business Committee.

Dr. MacAlister, Mr. Bryant, Sir Philip Smyly, and Dr. Bruce were appointed to constitute the Business Committee.

Results of Examinations.

The REGISTRAR (Mr. ALLEN) presented a series of tables:—

(*a*) Table showing results of professional medical examinations during 1899; (*b*) table showing results of professional examinations for qualifications in sanitary science, public health, or State medicine during 1899; (*c*) table showing results of professional dental examinations during 1899; (*d*) table showing results of preliminary examinations during 1899; (*e*) table showing exceptional cases in regard to length of course of study during 1899; (*f*) table showing results of competition held on Feb. 19th, 1900, for commissions in the medical staff of the Royal Navy; (*g*) table showing results of competition held in February, 1900, for commissions in the medical staff of the Army; and (*h*) table showing results of competition held in February, 1900, for commissions in the Indian Medical Service.

Mr. BROWN said he noticed that the Royal College of Surgeons in Ireland examined candidates for the dental diploma who were without curriculum.

Sir PHILIP SMYLY explained that the College only examined candidates without curriculum who were already on the Dentists' Register.

When Dr. HERON WATSON, seconded by Sir DYCE DUCKWORTH, moved that the tables with reference to the results of the service examinations be entered on the minutes,

Mr. BROWN moved that these tables be referred to the Examination Committee for report. He thought that if the tables were to have any educational value they should be scrutinised by the committee and not merely accepted and passed over. They showed that certain of the candidates had been deficient in knowledge of medicine and surgery and some of the preliminary subjects.

Dr. BRUCE seconded this motion.

Sir DYCE DUCKWORTH, as chairman of the Examining Committee, said he would like to know from Mr. Brown what time he thought the proposed inquiry should take. For himself he did not see how the committee could do any useful work. They could not go behind the reports furnished to the Council and ask for the papers of the candidates who had shown defective knowledge.

Sir JOHN BATTY TUKE said that although the proposal of Mr. Brown sounded very well it could not have any practical results, for the committee could not go behind the information supplied to the Council.

Mr. BROWN said that if the committee undertook the inquiry he would be pleased to attend their meeting and assist them to the best of his ability.

The motion of Mr. BROWN was rejected by a large majority and that of Dr. HERON WATSON adopted by the Council.

On the motion of Dr. HERON WATSON a vote of thanks was accorded to those who had furnished the information for the tables.

Amendment of Standing Orders.

A number of new and amended Standing Orders for the conduct of debate were brought up from the Executive Committee and adopted by the Council. They provided, among other things, for the use of the closure. The President expressed his approval of the changes and said that they would be a great advantage to him in presiding.

Public Health Committee.

On the motion of Dr. MACALISTER, seconded by Mr. TEALE, it was agreed to appoint Mr. W. H. Power to the

place on the Public Health Committee vacant by the death of Sir Richard Thorne.

The Penal and Disciplinary Powers.

The PRESIDENT presented a further report on the steps taken by him to have Section 29 of the Medical Act of 1858 amended so as to secure increased penal and disciplinary powers. The report was in the following terms, viz.:—

On Dec. 2nd, 1899, the President having presented a report in which it was shown that after considerable negotiation with the licensing authorities general approval had been at length obtained of certain draft clauses which had been prepared for securing the increased penal and disciplinary powers desired by the Council, the following resolution was passed:—

"That the Council approve the amended draft clauses embodied in the President's report and request him to forward the same to the Lord President of the Privy Council expressing the Council's desire that the Government would promote or support a Bill for passing them into law."

In accordance with this resolution the President communicated with the Privy Council both by letter and in person, and as the result the Lord President on Dec. 23rd, 1899, caused him to be informed by letter that a measure embodying the provisions proposed by the Council, if introduced into Parliament on the responsibility of the Medical Council and the representatives of the Universities in the House of Commons, would be entitled to the favourable consideration of Her Majesty's Government. It was pointed out in the same communication that as Clause 3 proposed to take away from the Chief Commissioner of Police the right to retain all penalties recovered in the Metropolitan District, it was desirable that the Medical Council should communicate on that subject with the Secretary of State for the Home Department.

The position of the question was accordingly on Jan. 22nd, 1900, explained by the President to the Secretary of State for the Home Department, by whom he was assured on Feb. 21st, 1900, that having considered the proposals of the Medical Council and the letter of the President, that, subject to certain verbal amendments, he did not propose to offer any opposition to Clause 3, which related to the allocation of penalties.

On Feb. 26th, 1900, the President reported these facts to the Executive Committee, when he was authorised to instruct Mr. Farrer and Mr. Muir Mackenzie to prepare a Bill in accordance with the clauses submitted to, and approved by, the Council on Dec. 2nd, 1899.

The Bill thus drafted by the Council's legal advisers is appended to this report and, acting on the suggestion contained in the Lord President's letter of Dec. 23rd, 1899, the President has sought the coöperation of the Parliamentary Representatives of the various universities of the United Kingdom by addressing to them the following letter:—

General Council of Medical Education and Registration of the United Kingdom,
299, Oxford-street, London, W., April, 1900.

DEAR SIR,—For some considerable time the General Medical Council has had under its consideration the amendment of those clauses of the Medical Act, 1858, which make provision as to its penal powers. After communication with the Universities and other licensing medical authorities of the United Kingdom general approval has been secured for amendments, whereby any licensing body may be able to deprive unworthy graduates or licentiates of their medical degrees or diplomas as the case may be, and to restore them, if thought fit, after a certain lapse of time.

I enclose a copy of the proposed Bill to carry this arrangement into effect. It consists of only three clauses of any importance and with regard to them I may say that Clauses 1 and 2 have already been submitted to the authorities of the Universities and of the Medical and Surgical Corporations and adjusted in accordance with their criticisms, whilst Clause 3 has been adjusted after correspondence with the Home Office.

The clauses as adjusted having been submitted for the approval of the Privy Council I have been officially informed by the Lord President that a measure embodying the proposed provisions, if introduced into Parliament on the responsibility of the Medical Council and the representatives of the universities in the House of Commons, would be entitled to the favourable consideration of Her Majesty's Government.

I have, therefore, on behalf of the General Medical Council, to request that you will be good enough to assist this Council in obtaining this much-needed amendment of the law by allowing your name to appear as one of those bringing in the Bill.

Yours faithfully,
WM. TURNER, President.

Answers have been received in reply to this letter from Sir William R. Anson, Bart., the Right Hon. J. G. Talbot, Sir R. C. Jebb, Sir Michael Foster, K.C.B., the Right Hon. W. E. H. Lecky, and Sir John Batty Tuke, representatives respectively of the Universities of Oxford, Cambridge, London, Dublin and Edinburgh and St. Andrews, all of whom have assented to support the Bill.

It is intended to have the Bill introduced into the House of Commons at the first convenient opportunity.

DRAFT OF A BILL TO AMEND THE MEDICAL ACTS, 1858 TO 1886.

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. Where a person registered under the Medical Acts has been convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, or has, after due inquiry, been judged by the General Council to have been guilty of infamous conduct in a professional respect, the General Council may, if it thinks fit, by order direct that the name of the person shall be and remain erased from the Medical Register for a limited period, and may from time to time, by order, vary such period, and at the expiration of the period limited by such order or subsequent order the Registrar shall, if the person shall then possess a medical diploma, and unless otherwise ordered by the General Council, restore the name of the person and his then existing medical diplomas to the Medical Register. Provided that the powers conferred on the General Council by this section shall not prejudice or curtail the powers of erasing a name from the Medical Register conferred on the General Council by the Medical Act, 1858.

2. (*a*) It shall be lawful for each of the medical authorities, if and when such authority thinks fit, to revoke, suspend the use of, or cancel the medical diplomas or diploma of such medical authority held by any person whose name has been erased from the Medical Register by order of the General Council for any of the causes mentioned in Section 29 of the Medical Act, 1858, and subsequently to restore such medical diplomas or diploma to such person without his being required again to pass a qualifying examination.

(*b*) Nothing in this Act shall prejudice or affect the powers already possessed by any medical authority of depriving a member of his medical diploma or diplomas or of striking off members from its lists or rolls.

3. Notwithstanding anything contained in any Act now in force or hereafter to be passed, all fines and penalties recovered under the Medical Acts or the Dentists Act, 1878, whether recovered before a magistrate of the police-courts of the metropolis or elsewhere, shall be paid to the treasurer of the General Council.

4. In this Act "General Council" means the General Council of Medical Education and Registration of the United Kingdom.

"Medical authorities" means the universities and bodies within the United Kingdom entitled to grant medical diplomas conferring on the holder the right to registration under the Medical Acts.

"Medical diploma" means a medical diploma as defined in the Medical Act, 1886, and entitling the holder to be registered in the Medical Register.

5. This Act may be cited as the Medical Act, 1900, and shall be construed as one with the Medical Acts.

The PRESIDENT said that since the report was prepared he had received a telegram from Mr. J. A. Campbell, who represented the Universities of Glasgow and Aberdeen, saying that he heartily gave his assent to support the Bill. He further explained that this draft was, with one or two small exceptions in phraseology, precisely the same as the draft before the Council in December last. The proviso had been inserted that the powers conferred on the Council by the first section should not prejudice or curtail the power of erasing a name from the Medical Register conferred on the Council by the Act of 1876. It was proposed, therefore, that the Council should retain its present power and add to it this power of limiting the period of erasure. At the Executive Committee yesterday there was a motion passed that he should approach two important members of Parliament, members for the Universities of Oxford and Cambridge, and request them to take charge of the Bill, and he proposed to lose no time in doing this if it met the wishes of the Council.

The report was received and entered in the minutes, and on the motion of Dr. MACALISTER, seconded by Dr. GLOVER, it was agreed that the steps taken by the President as set forth in the report be approved by the Council and that he be requested to continue his efforts with a view to procuring the passage of the Bill into law.

Restoration to Register.

The Council sat *in camerâ* to receive from the Executive Committee a report in regard to the restoration of names to the Medical Register. On the re-admission of the public

The PRESIDENT said: I have to announce for the information of the public that the Council has resolved to restore the name of Mr. S. Frederick Murphy to the Medical Register.

Mr. MURPHY, L.R.C.S.I., 1885, was struck off on June 3rd, 1895.

In accordance with a resolution passed earlier in the afternoon the Council adjourned at 4 o'clock to enable certain committees to meet for the preparation of their reports.

WEDNESDAY, MAY 23RD.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

Congratulations to Sir Hector Cameron.

The PRESIDENT: Before we proceed to the business on the programme there is one matter which I think the Council would like to have brought before it. I have no doubt that the members of the Council have seen in this morning's newspapers the announcement that Her Majesty has been pleased to confer the honour of knighthood upon a member of the Council—Dr. Hector Cameron. I think that I am expressing the wishes of the Council when, in their name, I most cordially congratulate him on the honour he has received.

These remarks of the President were received with manifest approval by all the members of the Council.

Sir HECTOR CAMERON, rising in his place, thanked the President and the Council for their congratulations.

Restorations to the Medical Register.

The Council then sat for over an hour *in camera* considering the report of the Executive Committee in regard to the restoration of names to the Medical Register.

The Midwives Question.

The next business was to receive an interim report from the Midwives Bill Committee on the steps taken since the last session of the Council regarding the Midwives Bill, 1900.

The PRESIDENT said that the Council would notice that he was chairman of this committee, but as he could not put the report from the chair he had asked Dr. Glover to be good enough to take charge of it.

Dr. GLOVER then presented the report, which was in the following terms, viz.:—

At their meeting on Feb. 26th, 1900, the Executive Committee had their attention called to copies sent by Mr. Humphreys, secretary of the Midwives Bill Committee, of an amended Midwives Bill which was being promoted by that committee, and as the consideration of this Bill by Parliament was then impending, and it appeared that some action should be taken earlier than the Midwives Bill Committee of the Council could be called together, the following resolution was adopted:—

Resolved:—That as the Midwives Bill now before Parliament does not make the provision as advised by the General Medical Council (see Report in Minutes, vol. xxxvi., page 201) for requiring the licensed midwife to apply for qualified medical assistance in every case attended by a midwife which presents symptoms of difficulty, abnormality, danger, or disease on the part of the mother or of the new-born child, the Executive Committee would again represent to the Lord President that in its opinion such a provision is one of imperative necessity for the safety of lying-in women, and they would urge that the Bill should include such a provision.

This resolution was forwarded to the Government and the views of the committee were further explained by the President, who called in person at the Privy Council Office.

The following answer to this communication was received on March 6th:—

Privy Council Office, London, S. W.,
March 5th, 1900.

SIR,—I have submitted to the Lord President of the Council your letter of the 1st instant, with reference to the omission from the Midwives Bill, now before Parliament, of a provision requiring a licensed midwife to apply for qualified medical assistance in certain cases; and I am to inform you that, in His Grace's opinion, the best means of providing for the object desired would be by a rule, which must be approved by the General Medical Council under Clause 4, 1 (*d*) of the Bill. I am, Sir, your obedient servant,

A. W. FITZROY.

Sir William Turner, M.B., &c. &c.,
President of the General Medical Council.

The reference of the question in the House of Commons to the Grand Committee on Law, &c., afforded an opportunity for calling together the Midwives Bill Committee, which met on March 21st, 1900, when this reply of the Privy Council was taken into consideration.

Thereupon the committee passed the following resolutions:—

1. That, in the opinion of this committee, the important matter of a midwife being compelled to seek the assistance of a registered medical practitioner in all cases of difficulty, abnormality, or of disease on the part of the mother or the new-born child, cannot with safety to the public be left to be regulated by a rule of the Central Midwives Board, and that therefore it is essential that a special clause should be inserted in the Bill dealing with the matter.

2. That the following amendments be made in the Bill as at present drafted:—

(1) That Section 2, Sub-section (5) be rearranged so as to read as follows:—

"The certificate under this Act shall not confer upon any woman any right to attend cases of abnormal labour, or of disease of or danger to the mother or the child, nor any right or title to be registered under the Medical Acts, or to assume any name, title, or designation implying that she is by law recognised as a medical practitioner, or that she is qualified to grant any medical certificate, or any certificate of death or still-birth."

(2) That Section 3 be amended so as to provide that no woman shall obtain certification under the Act unless she produces to the Central Midwives Board evidence of good character satisfactory to the Board.

(3) That in Clause 4, 1, after Sub-section (*d*), the following new sub-section be inserted:—

(*d*[1]) "requiring midwives to procure the attendance of a legally qualified medical practitioner in cases of abnormal labour or of disease of, or danger to, the mother or the child."

These resolutions the Registrar was directed to forward to the Government, and to state that the Midwives Bill Committee desired to press on the Lord President the importance of the amendments they had drafted, and trusted that his assistance would be given in bringing them before the Grand Committee on Law, and in procuring their adoption. At the same time it was intimated that members would be pleased to attend the Lord President in person should he desire further explanations.

On Monday, March 26, Dr. MacAlister, Mr. Horsley, and Dr. Glover, on behalf of the committee, had an interview with the Solicitor-General at the House of Commons, when they represented the importance of securing—

(a) An amendment of Sub-section (5) of Section 2, making it more clear that a midwife is not authorised or entitled to attend cases of abnormal labour.

(b) That by a clause in the Bill the midwife, in cases of abnormality, danger, or disease affecting mother or child, shall apply for the attendance of a registered medical practitioner.

(c) That under Section 3 evidence of good character shall be required from all applicants for licence as midwives, whether they already hold certain certificates or not.

The Solicitor-General discussed these points at length with the deputation, and promised to give them consideration.

On March 27th, 1900, the following further communication was received from the Privy Council Office:—

Privy Council Office, London, S.W.,
March 26th, 1900.

Sir,—I am directed by the Lord President of the Council to acknowledge the receipt of your letter of the 22nd instant on the subject of the Midwives Bill now before Parliament and to state, for the information of the General Medical Council that his Grace will give his best consideration to the suggested amendments before the Bill reaches the House of Lords; but in regard to the last of these he sees no reason, as at present advised, to depart from the opinion already expressed that the proper way of giving effect to the views of the General Medical Council is by a rule under Clause 4 (1) (*d*).

Indeed the Lord President believes that any other course would be not only unnecessary but inconvenient, and, in support of this view, his Grace instructs me to point out that the terms of Clauses 2 (5) and 4 (1) (*d*) imply the necessity for the observance of some such regulation; and that, as no rules can be made for the purpose of bringing the Bill into operation without the approval of the General Medical Council, they will be in a position to obtain the adoption of any reasonable rule that may, in their judgment, be sufficient for the purpose. I am Sir, your obedient servant,

A. W. FITZROY.

The Registrar of the General Medical Council.

For the consideration of this communication, and of the Bill as it had emerged from the Grand Committee, the Midwives Bill Committee again met on April 28th, and after giving careful attention to the subject, resolved:—

"That in view of the communication from the Lord President of the Council, and of the amended Clause 14 (1) by which the Lord President was empowered to determine questions on which the Midwives Board and the General Council might not be in agreement, the adoption of Amendment 1 of March 21 as a clause in the Bill should not be pressed."

Mr. Horsley desired that his dissent should be recorded.

As a necessary consequence the proposed amendment of March 21st, 2 (3) (*d*[1]), was also not pressed, but the committee were of opinion that the amendment set forth 2 (1)—which recommended the rearrangement of Section 2, Sub-section 5—and that in 2 (2)—which provides for the production of evidence of good character—should still be pressed as amendments of importance that ought to be adopted.

The committee were further of opinion that the definition clause (18) of the Bill should be amended by the substitution of the following:—

"Midwife means a woman certified under this Act who undertakes for gain to attend women during the lying-in period."

At the request of the committee the President undertook to bring these resolutions before the notice of the Lord President, and the members of the deputation who had previously interviewed the Solicitor-General undertook to see him again. The President also acceded to the request of the committee to undertake the duty of chairman so far as it might be possible for him to do so.

On the motion of Dr. GLOVER, seconded by Mr. BRYANT, the report was received and entered on the minutes.

Dr. GLOVER then moved:—

That the proceedings of the committee as recorded in the report be approved by the Council.

He said that the question involved here was one of great public and professional interest at the present moment, and he assured the Council that the committee had not been inattentive to the instructions given to them. They met on March 21st, they had an interview with the Solicitor-General on March 26th, and they met again on April 28th. The report of the committee, containing as it did the letters of the Lord President of the Privy Council, was a document of considerable interest and he thought it would have more than temporary value. The object of the committee had been to see that the points considered by the Council to be important in any legislation of this kind were secured in the Bill now before the House of Commons.

Dr. MCVAIL asked whether the Bill was sent to the Council officially by the Government.

The PRESIDENT said he had considered that every member of the Council should have before him the Bill as amended by the Grand Committee on Law and at his request the Bill had been forwarded to members.

Dr. MCVAIL asked whether the Government had since the last meeting of the Council sent any communication desiring the opinion of the Council upon this Bill.

The PRESIDENT: On the Bill as amended by the Grand Committee?

Dr. MCVAIL: On the Bill as introduced into the House of Commons since the last meeting of this Council.

Dr. GLOVER: Yes, it has.

Dr. MCVAIL then asked whether the discussion upon this report would be the only opportunity members would have of considering and debating this question.

The PRESIDENT, said he would explain the situation. Some months ago the Council appointed a committee to watch legislation, and since then the committee had been very carefully watching the legislation. The committee had held two meetings and had had communications both with

official Members of Parliament and also with the Privy Council Office. The committee knew exactly what had taken place since the Bill was introduced, and it now reported to the Council what it had done. If a member brought forward a motion on the subject which was relevant, he had no doubt the Council would agree to consider that motion.

Dr. GLOVER, proceeding with his speech, reminded members that in April, 1898, the Council formulated the points which they would consider essential to be embodied in any legislation which would secure the approval of the Council. There were ten such points, and what the Council had to consider was how far the Bill in its present state met those points. He held that if at any time in the House of Commons any of the points which this Council had insisted upon were tampered with or were endangered, the whole support of this Council went, and he should hope that the support of the Government would go with it. One great point with the Council was that lying-in women should be protected from the unregulated practice of ignorant and unskilful midwives. In his judgment the great virtue of the Bill was that it put an end to the unregulated practice of ignorant and unskilful midwives. Another point which the Council had insisted upon was that the conditions under which licences were granted should include the production of satisfactory evidence as to character and training and experience in the conduct of natural labour. The third great point was that the regulations under which licensed midwives were required to practise should include provisions securing that the midwife should immediately seek qualified medical assistance in every case which presented symptoms of difficulty, abnormality, danger, or disease on the part of the mother or the new-born infant. This, of course, meant the limiting of the functions of the midwife to purely normal and ordinary cases of labour. The question was whether the Bill secured the limitation of the practice of midwives to the care of ordinary cases. He confessed that he had felt strongly on this point. He had felt so strongly that for some time he withheld his support, such as it was, from the Bill. He said in effect that he could not support the measure because it did not contain the necessary security that the midwife in cases of abnormality should call in skilled medical assistance. Mr. Horsley was still not satisfied upon this point, but he (Dr. Glover) was now satisfied that the Bill gave this security. The letters published in the report showed that the Lord President had given every consideration to the strong feeling of the Council in this matter. He felt sure that no one who considered the position of the Lord President, and his long experience, and his character for frankness and straightforwardness, would deny that these letters constituted very important elements in the discussion of this subject and were calculated to give the Council great satisfaction. The second letter showed that the Lord President took the same view as the Council as to the importance of limiting the functions of the midwife in this way, and of taking precautions to secure that she should call in the aid of the medical profession whenever a case passed into the region of abnormality or irregularity. The Lord President considered that there was in the Bill ample means of securing what the Council desired, and that it would be better secured by leaving the board and this Council to have a suitable regulation than by putting words into the Bill. It was well known to those who had watched legislation in the House of Commons, that the House was not a place for the discussion of details of medical legislation. He thought this Council had justification for being fully satisfied, having regard to the power of the Council to withhold approval from the rules if they did not include this regulation, and to the knowledge they had that if any doubt arose as to the rules or any conflict of opinion between the Midwives Board and the Council, which was a conceivable thing, they had the opinion of the Lord President in favour of their view. Therefore he thought their security was sufficient. He considered, therefore, that the Midwives Committee, with the exception of Mr. Horsley, were right in withdrawing their opposition. They had every reason to believe that the other points insisted on by the Council and pressed by the committee would have the earnest consideration of the Lord President before the Bill was brought on again. As to the definition clause now in the Bill, he confessed that it was difficult to understand. It said that the term midwife should mean a woman who undertook for reward to attend women in childbirth where no registered medical practitioner was engaged or employed. It appeared to him a mysterious, misleading, and unintelligible definition. The committee objected to it and suggested what seemed to him a much better and much simpler definition. He asked the Council to approve the action of the committee.

Mr. BRYANT seconded the motion.

Mr. HORSLEY wished to enter his dissent against the passing of the motion. He reminded the Council that when they passed resolutions containing the principles which they thought should be embodied in a Midwives Bill the chief of these was that in cases of abnormal labour midwives should be compelled to send for qualified medical assistance. Yet they were now informed by the Privy Council—and their watching committee seemed prepared to agree—that the Council could compel the Midwives Board to make a rule to compel midwives to get the assistance of registered medical practitioners in cases of abnormal labour or danger or disease. But the Council could not compel the Midwives Board to carry out such a rule, and there was no guarantee that in 10, 15, or 20 years the principle would be fully observed and carried out. He could not see any objection whatever to the principle finding expression in the Bill. The steadfast opposition of those who were well known to be not officially but actively promoting the Bill covered a great deal more than appeared. It was a mode of contending for greater freedom for midwives than the Council thought was desirable for the safety of the public. He therefore ventured to hope that the Council would not pass that part of the report containing the committee's resolution of April 28th. He hoped they would rather support the first conclusion of the committee, that arrived at on March 21st. That this position was the correct one was further established by the alteration made in the definition of the word "midwife." This alteration, as Dr. Glover had pointed out, was to obtain for the midwife the standing of an independent practitioner in midwifery. The definition was, it was alleged, put into the Bill in order that there might be no confusion with midwifery nurse. But there was no confusion, and the fact that the alteration had been made showed that those who were promoting the Bill meant that the midwife should be an independent practitioner. It was all very well for the Government to say that their representations on the subject would receive earnest attention, but the officials had behaved in the matter as if the Bill were a Government measure, and they had not received the Council's suggestions with the cordiality which they might expect.

The PRESIDENT asked Mr. Horsley if he wished to propose an amendment.

Mr. HORSLEY thought that the practical method would be to go into committee on the report.

The PRESIDENT: That has been dropped.

Dr. MACALISTER, as another member of the committee, reminded the Council that he had had something to do with the drawing up of the ten points to which Dr. Glover had referred, and he knew the importance of maintaining these in the Bill. He also thought that it would have been very desirable to get what the Council and their committee had asked for, but again and again they were assured, not by the promoters of the Bill but by the Privy Council themselves, that as a matter of drafting it was not only unnecessary but inconvenient that the principle should be given effect to in a clause of the Bill, as it could be done more effectively if embodied in one of the rules. The objection consequently was not to the principle but merely to the method of carrying it out, and if the Council wished to safeguard this or any other principle it was advisable that they should take the advice of old Parliamentarians as to the method of carrying it out. If they insisted further they would secure the shadow, not the substance. If they looked at Clause 14 of the Medical Act he thought that they would see that they met the objection taken by Mr. Horsley, for there was a direct appeal to the Lord President, and if there was any dispute between the General Medical Council and the Midwives Board the Lord President would act as arbitrator. Further, he felt that the Council should put their requirements into a rule which could be changed and strengthened from time to time rather than that these requirements should be crystallised as part of an Act of Parliament.

Sir CHRISTOPHER NIXON said that as the remaining member of the committee he had to say that Dr. MacAlister had expressed exactly the view which he entertained with regard to Mr. Horsley's objection. All the members of the committee were as anxious as Mr. Horsley to get the principle in question given effect to in a very specific way in the

Bill, but when it was represented by the Lord President that it was inconvenient, that it was not a practical way of dealing with the matter, and that the committee were likely only to get the back of the Government up against them by pressing the point it was time to reconsider the point, particularly as they were shown that they were fighting about a thing that there was no need to fight about, for the General Medical Council had the power to direct the Midwives Board to frame rules, one of them to be to regulate and restrict within limits the practice of midwives. If they insisted they would simply make the Government antagonistic to the views the Council entertained.

The PRESIDENT intimated that he had received from Mr. Horsley an amendment in writing. It would have to be read in connexion with the motion, for it was an addition to the motion. The two proposals combined read as follows:—

> That the proceedings of the committee as recorded in the report be approved by the Council with the exception of the conclusion of the committee on April 28th—namely, that the first resolution of March 21st should not be pressed upon the Government.

Mr. Horsley's amendment began at the words "with the exception." The practical working of the resolution, if adopted, would be that the Council should continue to press the committee's resolution of March 21st on the Government.

Mr. BROWN seconded the amendment. He was afraid, he said, that if this Bill became law and the Act did not enact that there should be a regulation such as that decided upon by the committee in March it would be contended that the Midwives Board had no power to formulate such a regulation. In a letter to THE LANCET Mr. Heywood Johnstone, who was one of the sponsors of the Bill, stated that one of the duties of the Board would be the passing of regulations for the conduct of midwives and there was nothing to prevent the Board restricting attendance to normal cases.

The PRESIDENT asked Mr. Brown whether Mr. Heywood Johnstone was a member of the medical profession. Was he sufficiently competent from his knowledge of medicine or midwifery to give a definite opinion upon such a matter?

Mr. BROWN replied that he did not know, but at any rate Mr. Heywood Johnstone was qualified enough to state his views in an organ of the medical profession.

The PRESIDENT pointed out that the words would be read as the words of an Act of Parliament and would not be interpreted according to any opinion expressed by Mr. Heywood Johnstone.

Mr. BROWN said that supposing a regulation was made compelling a midwife to call in skilled medical aid in abnormal cases Mr. Heywood Johnstone said that the regulation might provide for the calling in of medical assistance when necessary, but he said it was another thing to impose upon a woman who perhaps lived in the country and could not have a messenger at her command a penalty for not calling in medical aid. Mr. Heywood Johstone said it was absurd to ask the legislature to put upon a woman a penalty for not doing something which she found it impossible to do. Therefore it was obvious that the Board could not make rules which would protect the public sufficiently, and because of this he (Mr. Brown) insisted that the measure was one of a most dangerous character. This amendment should be proceeded with because he thought it would not be a safe thing to pass the Bill unless it provided for medical attendance such as the Council had already agreed was necessary. If the Bill did not do what the Council desired the Council must either insist upon their views or the Bill must fall to the ground. If the Council sanctioned the measure in its present form he felt convinced that they would be sanctioning a measure fraught with great danger to the public.

Dr. MACALISTER: If the principle in question were set forth in the Bill would Mr. Brown be in favour of the Bill?

Mr. BROWN: That is a different matter.

Dr. ATTHILL said he regretted that he must vote against the amendment. He should have preferred to do otherwise, but it was evident that they would only be running their heads against a stone wall if they stood out against the course suggested by the Lord President. He thought that the Bill was the best they could ever see passed and probably it would prove much less injurious to the medical profession than another Bill.

Dr. MCVAIL said he did not think that the difference was slight as between the motion and the amendment; he thought that the difference was very great. It was true that the only qualification of midwives was to be that they were not to attend cases of abnormal labour or cases where there was disease or danger to the mother or child; but who was to attend abnormal and difficult cases and who was to make the necessary financial provision? He held distinctly that the provision considered by the Privy Council to be sufficient would not prove sufficient. It was the very essence of this matter, if midwives were to do duty according to the Bill, that they should not attend cases of abnormal labour. But supposing that a case became abnormal and the woman could not leave it. She was precluded by the Bill from attending to it. How was the case to be attended until the doctor arrived? The whole difference hinged between normal and abnormal. In his opinion a provision such as the committee asked for in the resolution of March 21st was a much more satisfactory one than that of April 28th. He understood that the Government had put upon the Orders of the House of Commons a resolution to provide for the expenses incurred by the General Medical Council in carrying out the provisions of the Act, but he thought it would surely be much more to the point if they made provision for skilled medical attendance upon cases which became abnormal. As the Bill stood the woman would undoubtedly lay herself open to the penalty, and if she adhered strictly to the letter of the law she must leave the house immediately symptoms of abnormality appeared. He was astonished that Mr. Horsley did not propose something much stronger than his amendment, for not only should midwives be compelled to see skilled medical attendance, but the Government should be required, if they insisted on passing such a Bill as this, to provide for the expense of such attendance. He did not like either motion or amendment, but on the whole he thought the amendment was what the Council should adopt.

The PRESIDENT said that he should like to say a word or two, not as President but as a member of the committee, because he was present at the final meeting when the committee agreed to put the matter into the position which the Lord President had suggested. It seemed to him that in considering this matter he must agree with those who had spoken of it as a matter of great importance. In his view they had to take into consideration the principle upon which this Bill was framed. Parliament could not be expected to go into questions of labour, normal and abnormal, but delegated to this Council and the Midwives Board the duty of laying down the rules to regulate and restrict the practice of midwives. The Lord President told the Council plainly that all this matter lay within their power. Then they were to say that the Lord President was not competent to express what was the real meaning of the Bill. How were the Council to interpret this particular sub-section to which the Lord President drew attention? It seemed to him (Sir William Turner) that there was a safeguard in the Bill and that they need not ask for more, and it was because of this that he agreed with the majority of the committee in thinking that it was not necessary to press the resolution come to by the Council. He therefore intended to express his opinion by vote on this occasion and he should vote against the amendment.

A decision was then taken when 5 members voted for the amendment and 21 against it, three members being absent and one declining to vote.

The motion of Dr. Glover being put to the Council was carried.

Mr. BROWN said that he wished to propose a motion with regard to the constitution of the proposed Central Midwives Board. He desired that the board should consist of five regular medical practitioners, two to be appointed by the Royal College of Physicians of London, two by the Royal College of Surgeons of England, and one by the Apothecaries' Society of London, and he would move to that effect.

Dr. ATTHILL protested against such a motion being discussed.

Mr. HORSLEY said that he would second the motion if it were in order.

The PRESIDENT pointed out that the motion was not on the programme of business. It was not a matter which arose distinctly out of the committee's report, and it was quite apart from that portion of the Bill which they had had under discussion. He would, however, put it to the vote whether Mr. Brown should be allowed to propose the motion.

On a vote being taken the Council by a considerable majority decided to allow Mr. Brown to move.

Mr. BROWN accordingly moved in the terms of his suggestion. The situation, he said, had been very much altered

by the attitude taken up by the Government in regard to skilled medical assistance in cases of abnormality, and he considered it more necessary than ever to have a medical board instead of one in which the lay element predominated. He particularly took exception to the Incorporated Midwives Institute having power to appoint a member to the proposed board.

Mr. HORSLEY seconded the motion.

The previous question was moved by Dr. P. HERON WATSON and seconded by Dr. ATTHILL, but the Council rejected it.

Dr. MACALISTER, continuing the debate, reminded the Council of the remarks of the late Sir Richard Thorne about the inadvisability of the Council's taking up an attitude of hostility with regard to the constitution of the proposed board.

After Mr. BROWN had replied on the debate the motion was put to the vote and rejected by 18 votes to 4.

Dr. MACALISTER then moved that the President be requested to transmit to the Lord President of the Council a copy of the report and to inform him that the Council had approved of the steps taken by the committee.

Mr. BRYANT seconded this motion, which was carried by 23 to 3 votes.

Fraudulent Personation.

Mr. HORSLEY moved:—

That counsel's opinion be taken on the possibility of preventing, either by legal action under the existing law, or, if necessary, by amendment of the Medical and Dentists' Acts, fraudulent personation of registered medical and dental practitioners.

He said that the Council at present had no precise legal opinion on the subject, and it was desirable that they should have.

Mr. TOMES seconded and the motion was agreed to.

Mr. HORSLEY: As we have no solicitor, who will draft the questions?

The PRESIDENT: We really have a solicitor till the end of this session, for Mr. Farrer will act till its close.

Mr. HORSLEY: Will it be possible to see the case before it is submitted to counsel?

The PRESIDENT: The resolution will be sent to Mr. Farrer to-night. He will be asked to prepare the case and let us see it before it goes to Mr. Muir Mackenzie.

Prevention of Personation.

The adjourned consideration of the report submitted during last November session by the Committee on the Prevention of Personation was the next business and on the motion of Dr. MACALISTER the Council immediately went into committee.

Mr. HORSLEY explained that as chairman of the committee that drew up the report he wished to recommend it to the Council. The report consisted of 24 pages, but the committee's recommendations were presented in a series of 14 short paragraphs, mostly embodying important considerations. Among the principal of these was the necessity of securing identification of an applicant for registration by means of his handwriting, a method which already had been adopted by the English Branch Council and by the Registrar-General. Another chief consideration was connected with restoration to the Medical Register. Section 14 of the Act of 1858 had been practically disregarded, and the committee recommended that it should no longer be allowed to be dormant. Then there was the question of certificates of registration. The committee felt that these constituted the greatest danger to the Registrar because they were documents which might come into the hands of persons intending to personate a practitioner, and the Council had already had before them the case of a person who was now undergoing penal servitude for having obtained certificates of registration and used them in personating a practitioner, robbing people, &c. The remedy suggested was a form of receipt for registration which would be valid only until the succeeding publication of the Register.

The PRESIDENT asked if the committee had given consideration to memoranda on the subject which had been obtained by him from the Registrar of the Council and the Registrars of the Irish and Scottish Branch Councils.

Mr. HORSLEY replied that the committee got them, and he thought they had gone to all the members of the Council.

The PRESIDENT remarked that the committee had not adopted certain of the points that were specially brought forward in these memoranda.

Mr. HORSLEY thought that the criticisms in them were destructive of the committee's idea in reference to identification by means of handwriting.

Mr. BROWN: I think we should have these criticisms.

Dr. MACALISTER moved that the memoranda be printed and circulated among all the members of the Council.

Mr. HORSLEY seconded this proposal, which was agreed to.

Debate on the report was then postponed till Saturday, and the Council resumed.

The Appointment of a Solicitor to the Council.

The PRESIDENT moved:—

That it be remitted to the Executive Committee to consider the question of the appointment of a solicitor to the Council in succession to Mr. F. W. Farrer, and to report to the Council during its present session.

The PRESIDENT explained that the Executive Committee would be quite willing to receive from members of the Council the names of suitable candidates and further that they would take into consideration the suggestion of the Penal Cases Committee that the Council should have a solicitor whose duties would be confined to penal work in addition to the ordinary solicitor of the Council.

The Method of Appointing Representatives.

The REGISTRAR presented the following communication from the County of Durham Medical Union in regard to the method of appointment of the representatives of the licensing bodies on the General Medical Council:—

County of Durham Medical Union,
Secretaries' Offices,
32, John-street, Sunderland, March 14th, 1900.

SIR,—We are directed to forward you the enclosed copies of resolutions passed by the County of Durham Medical Union at a general meeting held on the 24th January last, and shall feel obliged by your bringing same before your Council.

Yours truly,
GRAHAM AND SHEPHERD.

The Registrar of the General Medical Council.

[*Copy Resolutions.*]

Resolved, that the meeting is of opinion that the medical profession is not sufficiently nor properly represented on the General Medical Council, and it is strongly recommended that all representatives from universities and corporations be elected by the individual votes of medical graduates of each university and members of each corporation.

Resolved, that a copy of the last resolution be forwarded to each university and corporation in the Kingdom, and to all medico-ethical societies, and to the General Medical Council, and to the Conference to be held in Manchester in May, and also the British Medical Association.

Dr. MACALISTER moved in accordance with the recommendation of the Executive Committee:—

That the Registrar be instructed to inform the secretaries of the County of Durham Medical Union that the resolution transmitted in their letter of March 14th, 1900, has been communicated to the Council, and that the Council is of opinion that the recommendation it contains cannot be carried into effect without a change in the existing law.

Mr. HORSLEY took exception to the latter part of the motion, saying that the Executive Committee were not in a position to give a legal opinion upon the matter.

Dr. MACALISTER said there could be no question about an alteration in the law being required if the suggested change were to be carried out, but he had no objection to the latter portion of the motion being omitted.

Thus curtailed the motion was adopted by the Council.

The Proposed Conjoint Board in London.

There was received and entered in the minutes the following communication from the Apothecaries' Society of London arising out of a resolution passed by the General Medical Council on Nov. 29th, 1899, as follows:—

That the Council, having regard to the fact that it is contrary to the interest of the public to have two competing examining boards sitting in London, strongly recommend the Royal College of Physicians of London, the College of Surgeons of England, and the Apothecaries' Society of London to combine for the purpose of holding qualified examinations conjointly.

Society of Apothecaries of London,
Blackfriars, London, E.C., May 12th, 1900.

SIR,—I am directed to forward you a resolution of the Society of Apothecaries of London dealing with the resolution passed at the last session of the Medical Council strongly recommending a combination of the Royal Colleges and the society for the purpose of holding qualifying examinations.

I am, Sirs, your most obedient servant,
JAMES RICHARD UPTON, Clerk to the Society.

Sir Wm. Turner, President of the Medical Council, &c.

"That the Society of Apothecaries of London while ready to consider the resolution passed by the Medical Council strongly recommending a combination between the Royal Colleges and the Society for the purpose of holding qualifying examinations, feels that it cannot discuss the principle involved in such a recommendation without

having the terms and conditions of the proposed combination fully laid before it."

*** The Council of the Royal College of Surgeons of England has acknowledged the receipt of a letter from the Registrar communicating the resolution of the Council.

Appointment of Assistant Examiner.

On the motion of Sir HUGH BEEVOR, seconded by Dr. BRUCE, it was agreed:—

That Mr. A. Marmaduke Sheild, F.R.C.S., be appointed an assistant examiner in surgery to the Society of Apothecaries of London for a period of four years, vice Mr. Bilton Pollard who retires by rotation.

The Council then adjourned.

THURSDAY, MAY 24TH.

The Council met again to-day, Sir WILLIAM TURNER presiding. The business of the sitting was the consideration of penal cases, but before commencing this the Council, sitting *in camerâ*, resolved to restore to the Medical Register the name of George Ingersoll Curragh, who possesses the licence of the Society of Apothecaries of London. The proceedings of the Council will be reported in next week's issue of THE LANCET.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In May the following candidates passed in the subjects indicated:—

Surgery.—W. P. Allen, Birmingham and London Hospitals; R. H. Birtwell and H. Greenwood, London Hospital; J. R. Howroyd (Section II.), Leeds; C. Johnson (Section II.), Durham and London Hospital; J. Jones, Edinburgh and London Hospital, and J. H. Kellgren (Section I.), Cambridge and St. George's Hospital.

Medicine.—W. Archer, Leeds; A. St. J. Bateman (Section II.), King's College Hospital; R. H. Birtwell, London Hospital; R. Brookes (Section II.), Westminster Hospital; T. Burdekin, University College Hospital; P. J. Fitzgerald, Dublin; J. R. Howroyd (Section II.), Leeds; F. S. Leech (Sections I. and II.), University College Hospital; C. A. C. Salmon, Guy's Hospital; C. V. Smith, University College Hospital; S. Southam, Westminster Hospital, and T. R. Wilshaw (Section I.), Birmingham.

Forensic Medicine.—W. Archer, Leeds; R. H. Birtwell, London Hospital; M. A. Curry, Bombay; F. S. Leech, University College Hospital; C. A. C. Salmon, Guy's Hospital; C. V. Smith, University College Hospital; and S. Southam, Westminster Hospital.

Midwifery.—R. H. Birtwell, London Hospital; M. A. Curry, Bombay; R. N. de V. Dawson, St. Thomas's Hospital; P. J. Fitzgerald, Dublin; W. P. A. Hardwicke, Durham; F. A. Hort, Middlesex Hospital; J. Hunter, Toronto and Westminster Hospital; R. A. Jones, St. Mary's Hospital; J. H. Kellgren, Cambridge and St. George's Hospital; and S. Southam, Westminster Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise in Medicine, Surgery, and Midwifery: W. P. Allen, R. H. Birtwell, R. Brookes, H. Greenwood, J. R. Howroyd, J. Jones, F. S. Leech, C. A. C. Salmon, and S. Southam.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following gentlemen having passed the necessary examination have been admitted Licentiates in Dental Surgery of the College:—

A. L. Harrison, T. A. Rae, G. M. Sterling, and W. Wood.

UNIVERSITY OF BRUSSELS.—At the May Examination the following practitioners satisfied the examiners and obtained the M.D. degree:—

Kennett de Risley Bell, Uppingham; Miss Cotineau, Madras; Geoffrey Stead, Walsall; Mrs. Coghill Hawkes, Claremont-square, N.; Miss Chase, Madras; R. C. McCleod, Westminster Hospital; and D. W. L. Soutter, Finsbury-park, N.

PROGRESSIVE PLYMOUTH.—At the last meeting of the Plymouth Borough Council it was decided to add measles and whooping-cough to the list of diseases to be notified under the Infectious Diseases Act; it was further determined that phthisis should be made notifiable at the discretion of the medical practitioners.—At the meeting of the Plymouth Borough Council held on May 15th a tender was accepted for erecting sewerage works at a cost of £88,026.

BRISTOL PORT SANITARY DISTRICT.—The annual report of the medical officers of health (Dr. D. S. Davies and Mr. J. C. Heaven) of the Bristol Port Sanitary District for 1899 has just been issued. It shows that 1544 vessels were inspected in dock during the year and that the percentage of these found with sanitary defects was 14·4, as against 17·1 in 1897, the previous lowest record. Three notifications of suspected cases of plague were received from London, Southampton, and Cardiff respectively. Disinfection was carried out on five vessels from infected ports, especial efforts being made to exterminate the rats on board.

THE Swansea County Council has voted the sum of £50 towards the funds of the Swansea Hospital.

THE order for the muzzling of dogs has been rescinded in Brecknockshire, Carmarthenshire, and Glamorganshire.

CARDIFF SEAMEN'S HOSPITAL.—At a meeting of the committee held on May 14th under the presidency of Sir Thomas Morel it was stated that the subscriptions now received amounted to £26,520, including the sum of £10,000 promised by Lord Bute conditionally upon a total of £24,000 being raised.

VACCINATION EXPENDITURE.—At the meeting of the Warmley (Gloucestershire) Board of Guardians held on May 15th it was stated that the cost of vaccination for the first quarters of 1898 and 1899 was £48 and £42 respectively, whereas the expenditure for the corresponding quarter of 1900 amounted to £147.

ISOLATION HOSPITAL FOR STROUD.—At a special meeting of the Stroud (Gloucestershire) Urban District Council held on May 16th it was decided, owing to the outbreak of scarlet fever, to erect a temporary iron isolation hospital. This will provide accommodation for 12 patients and the cost, exclusive of laying the foundation, will be £300.

UNIVERSITY OF CAMBRIDGE.—The relief of Mafeking was celebrated by a strictly official bonfire, under the supervision of the Vice-Chancellor and the Mayor, on Midsummer Common, and by much unofficial jubilation among the students. On this occasion the "felonious" incidents of the Ladysmith celebration were happily absent.—The University of Sydney has been recognised as a medical school at which candidates for Cambridge degrees may pursue their professional studies.—Courses in histology, pathology, bacteriology, pharmacology and therapeutics, and other medical subjects will this year be given during the Long Vacation, beginning on July 6th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Heinrich Bose, who had very recently retired from the chair of Surgery in the University of Giessen, aged 60 years.—Dr. Rudolf von Limbeck, Extraordinary Professor of Internal Medicine in Vienna and formerly Assistant in the Prague Medical Clinic. He made many researches on the blood in disease, and in addition to his professional labours undertook others of a political nature. He was 39 years of age.—Dr. Benjamin F. Leonard, formerly Professor of Gynæcology and Children's Diseases in the Baltimore Medical College.

PRESENTATIONS TO MEDICAL MEN.—At a meeting at Rhymney, South Wales, on May 9th, Mr. Kristnalal Datta, L.R.C.P. & S. Edin., was presented with an address, a gold watch, and a silver-mounted walking-stick as a mark of respect on the occasion of his appointment as senior medical officer to the Ferndale Colliery workmen.—At the last monthly meeting of the Bristol Bicycle and Tricycle Club, Mr. A. N. Heron, L.R.C.P. & S. Irel., the honorary secretary, was presented with a solid silver tea service on the occasion of his marriage.—At a numerously attended meeting of the inhabitants at the Assembly Rooms, Whitley, on May 15th, Mr. A. Duke, M.B. Edin., who, after a residence of five years, is leaving that town, was presented with a solid silver tea service and tray, a purse of gold, and an album containing an illuminated address and the names of the subscribers.—Mr. Meredith Young, M.D. Edin., D.P.H. Vict., of Crewe, has been the recipient of a clock from the officials of the Crewe Corporation, upon his leaving the town to take up the appointment of medical officer of health to the Corporation of Stockport.—Mr. Stephen Orson Lane, M.R.C.S. Eng., L.S.A., of Braunton, North Devon, has been presented by the residents of Braunton and surrounding parishes with a purse of 120 sovereigns accompanied by an illuminated address as a mark of respect and esteem upon his retirement from practice.—The members of the St. Austell (Cornwall) Branch of the St. John Ambulance Association have presented Mr. Charles William Seccombe, L.R.C.P. Lond., M.R.C.S. Eng., with a travelling bag as a token of appreciation for his services as honorary instructor of the class.

WHITSUNTIDE ON THE CONTINENT.—Cheap tickets available for eight days will be issued to Brussels, &c., from May 30th to June 2nd inclusive and from June 4th, viâ Harwich and Antwerp. Passengers leaving London in the evening will reach Brussels next morning after a night's rest on board the steamer. For visiting the Hague, Amsterdam, Utrecht, and other parts of Holland, the Rhine, North and South Germany, and Bâle for Switzerland, special facilities are offered viâ the Great Eastern Railway Company's Royal Mail Harwich Hook of Holland route, through carriages being run to Amsterdam and Berlin, Cologne and Bâle. Restaurant cars are run on the North and South German express trains. The General Steam Navigation Company's fast passenger steamers will leave Harwich on May 30th and June 2nd, returning on June 3rd and 6th.

ROYAL PORTSMOUTH HOSPITAL. — A festival dinner in aid of the Royal Portsmouth Hospital was held in the banqueting room at the Portsmouth Town Hall on May 17th. The gathering was remarkable from two points of view. The Mayor (Mr. H. R. Pink) decided to abolish the Saturday street collection and in its stead to inaugurate a dinner, and also it was the first reunion of the kind in Portsmouth at which ladies had been present. The Right Rev. the Bishop of Winchester presided and was supported by the borough Member, Sir W. D. King, chairman, and the committee of management, the medical staff of the hospital, and many of the leading inhabitants of the town. The dinner proved most successful. Donations and new subscriptions (£200) amounting to £837 were received, whereas the system of street collection hitherto adopted amounted to about £500.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Irish Lunacy Laws.

THERE has been introduced into the House of Lords by the Lord Chancellor of Ireland a Bill for the amendment of the lunacy laws of that country.

Whipping for Youthful Offenders.

During the debate in the House of Commons on Monday, May 21st, on the second reading of the Youthful Offenders Bill a great deal of adverse criticism was bestowed on the proposal to extend beyond the Summary Jurisdiction Act the power given to magistrates to order whipping. Many members condemned the proposal as retrograde, demoralising, and indefensible, among the number being Sir Walter Foster, who said that after seeing the injury done to a boy in his own constituency some years ago he had determined to oppose the whipping of youthful offenders. A motion was made for the rejection of the Bill, but when by the rules of the House the debate stood adjourned no decision had been arrived at.

HOUSE OF COMMONS.

THURSDAY, MAY 17TH.

Army Medical Officers.

MR. MACNEILL asked the Under Secretary of State for War whether, seeing that under allowance regulations a retired officer who might be recalled to service was to be granted in aid of his outfit a sum not exceeding £100, and that by Royal warrant it was provided that army reserved officers were liable to be called to army service at a time of emergency, he would state on what ground the medical officers who had been recalled from retirement to active service had been refused this allowance in aid of outfit which had been granted to all other officers in similar cases; and whether, having regard to the dissatisfaction created by the refusal of this allowance, the War Office would take steps to secure that retired medical officers should not be denied a favour extended to other officers recalled to active service.—MR. WYNDHAM replied: These officers are offered employment in ordinary course as acting medical officers in charge of stations at home, and cannot be regarded as being in a position analogous to that of officers recalled to service. They are therefore not entitled to outfit allowance.

Army Boots.

MR. CHANNING asked the Financial Secretary to the War Office whether reports had been received from commanding or other officers or officials charged with this duty with respect to the boots supplied to the troops in South Africa; to what troops, and in what quantities, the 60,000 boots supplied from India last autumn had been served out; and what reports had been received as to the usefulness and durability or failure of these boots under the conditions of active service.—MR. POWELL WILLIAMS replied: Reports have been received from Lord Roberts and Sir Redvers Buller, but they do not indicate the distribution of the Indian boots among the troops, and at the date of the last report the Indian boots had not been sufficiently tried to admit of a definite opinion upon their merits.

The Vaccination of Pupil Teachers.

MR. HOWARD asked the Vice-President of the Committee of Council on Education whether the attention of the Board of Education had been called to the case of Georgina Moore of Tottenham who, though she had fulfilled all the conditions necessary to become a pupil teacher, had not been allowed to be articled because she had not been vaccinated, and whether an exception could be made in her case, there being evidence to show that vaccination would be dangerous, and also, having regard to the fact that since the form of medical certificate in these cases was adopted the law as to compulsory vaccination had been modified.—SIR JOHN GORST replied: I have already stated in reference to this very case that the Board of Education in the interest of the children in the schools consider it their duty to require teachers to be protected against small-pox.

FRIDAY, MAY 18TH.

Infectious Disease in the Quarrier Homes.

SIR CHARLES CAMERON asked the Lord Advocate whether he was aware that the Renfrew County Council had recently refused to receive into their hospital for infectious diseases cases of scarlet fever occurring at the Bridge of Weir Orphan Homes, and whether the Local Government Board had taken any, and if so what, steps to prevent the spread of the disease among the hundreds of children inhabiting the homes and through them to the general population.—The LORD ADVOCATE replied: The answer to the first branch of the question is in the affirmative. I am informed by the Local Government Board that the refusal was due to want of room, but the Board have had the position under their careful consideration, and if the steps they have recommended to the local authorities are carried out they will, in their opinion, effectually remove all cause for apprehension as to the spread of disease. As a matter of fact, no case of scarlet fever has occurred in the home since the last week of March.

MONDAY, MAY 21ST.

The Conscientious Objector.

MR. CHANNING asked the Home Secretary whether his attention had been called to the action of magistrates sitting at the monthly petty sessions at Lydd in refusing to grant certificates of exemption from the Vaccination Acts; whether he was aware that an applicant named Holdstock, who stated that he conscientiously objected on the ground that vaccination had proved injurious in his own family, was questioned as to alleged membership of an anti-vaccination society, and refused a certificate on the ground that two justices had to be satisfied; whether this questioning and the refusal were consistent with the requirements of the Vaccination Act, 1898; and what steps he would take to ensure to applicants their statutory rights under the Act.—SIR MATTHEW WHITE RIDLEY replied: I have inquired as to the facts of this case and am informed that a certificate of exemption was refused to the applicant because he failed to satisfy the justices that he had a conscientious objection to vaccination. This is in accordance with the Act; and it seems to me quite natural and right that justices should question an applicant with a view to eliciting the grounds of his belief, as to which they have to be satisfied before granting a certificate.

TUESDAY, MAY 22ND.

The Size of the Geneva Cross.

Captain NORTON asked the Under Secretary of State for War whether his attention had been drawn to the fact that the red cross as now used for ambulances and hospitals was too small to be distinguished with certainty at a distance from which rifle fire was now effective, and to the fact that the flag could not be distinguished even at a much shorter distance when there was no wind; and whether he would take steps to provide that the red cross should be made larger on wagons, marquees and bell tents, and that it should be displayed over hospitals by means of a light canvas in a wire frame.—MR. GEORGE WYNDHAM replied: These questions are under consideration and the experience gained in the present war will no doubt be valuable in enabling us to arrive at a conclusion.

The Proposed Exemption of Hospitals from Local Rates.

On the motion of Sir WILLIAM WALROND a Select Committee was appointed "to consider the operation of the law by which hospitals and other institutions for the care and treatment of the sick or of those afflicted in mind or body are liable to local rates, and to report whether under any and what conditions it is for the public interest that such hospitals and institutions, or any of them, should be exempted wholly or in part from such liability in future." The following members were appointed to constitute the committee—viz., Mr. Bonsor, Dr. Farquharson, Mr. Hayes Fisher, Sir Cameron Gull, Sir John Maclure, Mr. M'Crae, Mr. Pickersgill, Mr. Round, Mr. T. W. Russell, Mr. Tomlinson, Mr. Lawson Walton, Mr. Warr, and Sir James Woodhouse.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BRADFORD, P. P., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Bracknell District, comprising the Civil Parishes of Warfield, Winkfield, and Easthampstead, in Easthampstead Rural District.

BUSTEED, J. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Workhouse and the Parish of Ellesmere.

DUNLOP, T., M.B., C.M. Edin., D.P.H. Cantab., has been appointed Medical Officer of Health for the Aldershot Urban Sanitary District.

GOODMAN, G., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer of Health by the Glanford Brigg Rural District Council.

HARNETT, A., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health of the Eastleigh Urban Sanitary District by the Eastleigh and Bishopstoke District Council.

HARRIS, J. H., M.R.C.S., D.P.H. Cantab., has been appointed Certifying Surgeon under the Factory Acts for the Dartmouth District.

HEMMANS, LAWRENCE F., M.B., B.S. Durh., has been appointed House Surgeon to the Great Yarmouth Hospital, vice A. Goodall, resigned.

HODGKINS, A. E., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer for the Children's Hospital, Birmingham.

HUGHES, D. A., M.R.C.S., has been re-appointed Medical Officer by the Barmouth Urban District Council.

LEFEVRE, G. L., M.B., C.M. Glasg., has been appointed Medical Officer for the Longton Sanitary District for the parish of Stoke-upon-Trent, vice A. Averill.

LUNT, D., C.M., L.R.C.P. Irel., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Lymm District.

MCDOUGALL, J. R., M.B. Vict., L.R.C.P. Edin., M.R.C.S., D.P.H. Cantab., has been appointed Honorary Assistant Laryngologist to the Stanley Hospital, Liverpool.

NEWMAN, GEO., M.D. Edin., D.P.H. Cantab., has been appointed County Medical Officer of Health by the Bedfordshire County Council.

NICHOLL, E. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical and Vaccination Officer for the Billinghay Sanitary District of the Sleaford Union.

NOLAN, H. F., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Charing District.

PALMER, JOHN, L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Snodland District.

PLAYFAIR, HUGH J. M., M.D., F.R.C.S., M.R.C.P., has been appointed Obstetric Tutor to King's College Hospital, London.

PRESTON, C. H., M.D., B.S. Lond., L.R.C.S. Eng., has been appointed Lecturer in Dental Anatomy and Physiology, Owens College, Manchester.

PUGH, C. G., B.Sc. Lond., L.R.C.P., F.R.C.S., has been appointed Medical Officer's Assistant at the new Infirmary by the Bethnal Green Guardians.

TODD, H. B., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health, Charlton Kings, Cheltenham.

WYSE, T. F., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the East Ilsley District.

Vacancies.

For further Information regarding each vacancy reference should made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOROUGH HOSPITAL, Birkenhead.—Resident Junior House Surgeon. Salary £75 a year, with certain fees usually obtained.

BRECON INFIRMARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with furnished apartments, board, attendance, fire, and gas. Apply to the Secretary, 6, Bulwark, Brecon, South Wales.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board). Apply to the Hon. Sec., 23, Lowther-street, Carlisle.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Assistant Anæsthetist. The appointment is a yearly one, and honorary.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist. Tenable, subject to annual re-appointment, for not more than three years.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer for the above hospitals, unmarried. Salary £100 per annum (subject to a contribution to the Corporation Superannuation Fund), with board, washing, and lodging in the Hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer, unmarried. Salary commencing at £125, increasing annually by £25 to £250, with board, apartments, washing, &c.

CRAIGLEITH POORHOUSE AND HOSPITAL, Edinburgh.—Medical Officer, resident. Salary £100 per annum, with board and apartments. Apply to the Clerk, Parish Council Chambers, Castle-terrace, Edinburgh.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £130 a year, rising to £150, with board, residence, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DENTAL HOSPITAL OF LONDON, Leicester-square.—Two Assistant Dental Surgeons.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DINORWIC QUARRY HOSPITAL, Llanberis.—Resident Dispenser and Surgical Dresser.—Apply to Dr. E. W. R. Jones, Llanberis, Carnarvonshire.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell.—House Physician for six months. Board, residence, &c., provided, and an honorarium of £25 granted conditionally.

GATESHEAD DISPENSARY.—Assistant Medical Officer. Salary £130 per annum, increasing annually by £10 up to £160 per annum, without board or lodging.

GATESHEAD UNION.—Assistant Resident Medical Officer for the Workhouse. Salary £150 per annum, with furnished apartments, rations, and washing. Subject to superannuation deduction. Applications to the Union Clerk, Offices, Prince Consort-road, Gateshead.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—House Physician and Junior House Physician, both for six months. Salary of House Physician at the rate of £60 per annum, with board, lodging, and washing in the hospital. Salary of Junior House Physician at the rate of £30 per annum, and board, lodging, and washing in the hospital.

HARRIS PARISH COUNCIL.—Medical Officer for the Southern Division of Harris. Salary £90, besides other public appointments and private practice. Apply to Mr. T. Wilson, solicitor, Lochmaddy, Clerk.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £85.

LONDON COUNTY ASYLUM, Banstead, Sutton, Surrey.—Junior Assistant Medical Officer. Salary £150 per annum, with board, furnished apartments, and washing. Apply to the Clerk of the Asylums Committee, Office, 6, Waterloo-place, S.W.

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Additional Honorary Assistant Surgeon, *pro tem.*

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Pathologist. Honorarium of 50 guineas annually.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant House Surgeon for six months. Honorarium £20, and board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, London.—House Surgeon for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also House Physician for six months. Salary at the rate of £60 per annum, with board, residence, and laundry. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTHAMPTON GENERAL INFIRMARY.—Assistant to the House Surgeon for six months. Board, lodging, and washing provided, and an honorarium of £25 given.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £85 per annum, with board, washing, and residence.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, London.—Assistant Resident Medical Officer for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL, Birmingham.—Resident Physician for twelve months. Salary £50 per annum, with board, lodging, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £60 a year, with board, lodging, and washing.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both appointments for one year.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL NATIONAL MISSION TO DEEP-SEA FISHERMEN, 181, Queen Victoria-street, London.—Young Medical Man to take charge of Mission Hospital and do Evangelistic work on the Labrador Coast from July to November.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board and washing.

SCHOOL BOARD FOR LONDON.—Evening Continuation Schools.—Lecturers in First Aid and Home Nursing. Applications to the Clerk of the Evening Continuation Committee, School Board for London, Victoria Embankment, W.C.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £50 a year, with board, lodging, and washing, and £6 per annum given in lieu of all stimulants.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Secretary. Salary to commence at £250, to increase to £400.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—House Surgeon, unmarried. Salary £75 per annum, with board and residence and 10s. a month for washing.

WEST LONDON HOSPITAL, Hammersmith-road.—House Physician and House Surgeon for six months.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST HAM UNION.—Qualified Female Assistant Medical Officer (resident) for the Workhouse and Schools. Salary, £100 per annum, with usual residential allowance. Apply to the Clerk, Offices, Union Workhouse, Leytonstone, N.E.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium given at the rate of £50 per annum, and board, lodging, and washing.

WOOLWICH UNION.—Resident Assistant Medical Officer at the Infirmary at Plumstead. Unmarried. Salary £100 per annum, rising £10 yearly to £130, with apartments, rations, and washing. Appointment subject to statutory deductions. Apply to the Clerk to the Board, Union Offices, Woolwich.

Births, Marriages, and Deaths.

BIRTHS.

HILL.—On May 13th, at The Brow, Clevedon, the wife of Walter J. Hill, M.R.C.S., of a daughter.

PASTEUR.—On May 18th, at Chandos-street, Cavendish-square, the wife of William Pasteur, M.D., of a daughter.

MARRIAGES.

BOND—LAWNE.—On May 12th, at Holy Trinity Church, Worcester, Charles Hubert Bond, M.D., D.Sc., the Heath Asylum, Baldwyn's Park, Bexley, to Janet Constance, the only daughter of Fred. R. Lawne, of Worcester.

MACDONALD—TORDIFFE.—On May 16th, at the Church of St. Teresa, Ashford, Kent, F. Bedingfeld Macdonald, M.B., C.M. Edin., of Preston, Lancashire, to Pauline Mary, eldest daughter of E. Wolferstan Tordiffe, of Bank House, Tenterden.

VISE—DAVIES.—On May 2nd, at St. John's, Clayton, Yorks, Arthur Blithe Vise, of Holbeach, Lincs, to Blanche Marie, youngest daughter of Mrs. J. H. Davies, of Clayton.

DEATHS.

ADAMS.—On the 11th instant, at his residence, Chestnut House, Fore-street, Ipswich, Webster Adams, M.R.C.S., aged 59.

CENTER.—On May 16th, at Ardlaw, Carlton-road, Ealing, William Center, M.B., I.M.S., late Deputy-Surgeon-General, Central Provinces.

DAWSON.—On May 18th, at Redford, Dartmouth-road, Brondesbury, N.W., Richard Dawson, M.B. Lond., of Brunswick-square, Brighton, aged 70 years.

DYER.—On May 21st, Henry Geary Dyer, M.D., of Ringwood, Hampshire, in his 51st year.

GILFILLAN.—On May 21st, at Walker-street, Edinburgh, Janet Dorothy Gilfillan, M.B., Ch.B. Edin., only daughter of Samuel Gilfillan, Hampstead-hill-gardens, London, aged 27 years.

HOOD.—On May 17th, at 13, Calthorpe-road, Banbury, the residence of his father, Alexander Henry Morton Hood, M.R.C.S., L.R.C.P. Lond., aged 29 years.

PEARSE.—On the 20th May, at Brierley Hill, Edward Sainthill Pearse, M.R.C.S., L.R.C.P., formerly of Bradninch, Devon, aged 70 years

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

RAMPANT QUACKERY AND BEASTLY.

OUR attention has been drawn to the following handbill by a correspondent:—

.....Suffering Humanity!

DELAY IS DANGEROUS!

KING & Co.,

169 Thornton-road, Bradford. Back entrance—Listerhills-road. 169

A QUALIFIED PHYSICIAN AND SURGEON IN ATTENDANCE.

FRENCH LETTERS.

A. Quality.	s.	d.	C. Quality.	s.	d.
1 Sample Letter			1 Sample Letter	0	6
... ...			3 for	1	4
... ...			6 for	2	6
... ...			1 Dozen	4	0
... ...			Quarter Gross	10	0
... ...			Half Gross	15	0
... ...			Gross	28	0

Price List FREE.

169, THORNTON ROAD, BRADFORD.

The bill is, he states, to be found in most urinals and on many gate-posts in and near Bradford. There is no attempt at concealment. The firm advertises in the local directory as "herbalists." Our correspondent goes on to ask whether: 1. The bill comes under the working of the Indecent Advertisement Act. 2. Whether we can reasonably hope to stop it if we take proceedings. Quackery of all kinds is rampant in Bradford. We can only say that the bill apparently comes well within the provisions of the Act (52 & 53 Vict., c. 18) which specially deals with the posting of indecent advertisements in urinals and declares advertisements relating to complaints and infirmities arising from or relating to sexual intercourse to be indecent. Whether an advertisement of "French letters" is indecent must be a question of fact for the magistrate who tries the case. We conceive it can have but one answer. If the police decline to take the steps which it is their duty to take on the matter being brought to their notice, we know of nothing to prevent private citizens from doing so, but should recommend any who determine to be thus public spirited to employ a solicitor to initiate the necessary proceedings and conduct the prosecution.

"THE RELIEF OF THIRST."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 19th (p. 1453) there appears an annotation containing an extract from a letter from a correspondent as to any known method of quenching thirst, and to the question I would like to give a reply, as I have found out by experience that the following is correct. Being a naturalist I am very fond of taking long excursions on foot and in the heat o summer one of the torments is thirst. A friend, a hill-climber, recommended me to try what is constantly done in the Alps, viz., to put a small round pebble in the mouth and keep it there. On a hot day the more you drink the more you crave for fluids and the more you perspire. What the action of the pebble is, physiologically, I am not prepared to say. It may be from the fact that saliva is being constantly secreted and swallowed. The result, however, is all that can be desired, as thirst disappears and perspiration is diminished. I have gone as long as eight and a half hours in a broiling sun with nothing but dry biscuits and cheese for a lunch and at the end of that time was not particularly thirsty. Trusting this may be of use to someone as I am certain it will prove successful if tried.

I am, Sirs, yours faithfully,

Newport, Fife, May 23rd, 1900. A. PHILIP, M.D.

THE POISONS ACT.

To the Editors of THE LANCET.

SIRS,—What a lot of use our Poisons Act is! I find that I can go into every druggist's shop in my neighbourhood and buy threepenny-worth of tincture of opium, then take the train to the next station and begin operations again. The other day my servant told me that she had taken 40 grains of sulphonal every night for the last four nights and had taken 70 grains the night before she spoke to me about it. I found she had a bottle of tabloids, five grains in each, which she bought from a druggist for 10*d.*, with directions: "One or more to be crushed and swallowed with water, as the physician may direct." The physician part is surely a farce. This girl also told me that she had bought phenacetin tabloids. I think the proprietors of these tabloids are making a mistake in letting the public buy drugs indiscriminately. This ought to be put a stop to. I am, Sirs, yours faithfully,

May 18th, 1900. PAT.

"UNUSUAL LAPSE OF TIME BETWEEN TWO PREGNANCIES."

To the Editors of THE LANCET.

SIRS,—In reference to Mr. F. Pridham's case, mentioned in THE LANCET of May 12th, p. 1413, of unusual interval between two pregnancies (22 years), for which he claims a record, that this is not the case will be shown by the following. A patient of mine was delivered of a son on April 13th, 1875, and of a daughter on Oct. 28th, 1899, a lapse of 24½ years. She showed no sign of pregnancy during all those years. She was married to the same husband in both pregnancies, a fact not mentioned in Mr. Pridham's case.

I am, Sirs, yours faithfully,
JOHN POWER SHINE, M.B., B.Ch. R.U.I.

Barnsley, May 17th, 1900.

To the Editors of THE LANCET.

SIRS,—Perhaps you will permit me to correct a slight error in Dr. eorge Foy's letter which appears on p. 1481 of THE LANCET of May 19th. The son (myself) was 18 years old at the time of the girl's birth and was a lieutenant in a Highland regiment, not a captain.

I am, Sirs, yours faithfully,
WHIM.

May 19th, 1900.

WORTH FRAMING.

MESSRS. FLETCHER, FLETCHER, AND CO., of Holloway-road, London, N., the proprietors of "Vibrona," are offering reproductions in monochrome of famous pictures by celebrated painters at the reasonable price of half-a-crown each, post free, to any address within the United Kingdom or within any country in the postal union. We have received copies of the two pictures already issued—viz., "Cranmer at Traitors' Gate" and "The Fighting Temeraire," Turner's masterpiece. Both are excellent reproductions, on plate paper (20 inches by 25 inches), and well worth framing. Although, presumably, issued as an advertisement of "Vibrona" this feature has commendably been ignored so far as the pictures themselves are concerned, only an inconspicuous word or two appearing on the reproductions to stamp them as being the outcome of commercial enterprise.

SANATORIA FOR PHTHISICAL PATIENTS.

To the Editors of THE LANCET.

SIRS,—Would one of your readers suggest a hospital or home for the treatment of phthisis, open-air or otherwise, within the means of a domestic servant? Treatment at present would probably save her life, but she will inevitably go to the bad like her sister, recently deceased, unless taken in hand at once.

I am, Sirs, yours faithfully,
ENQUIRER.

May 21st, 1900.

*** We are afraid that no institution of the kind exists. A domestic servant's means when out of a situation are, as a rule, *nil*. So far as we know the lowest sum charged is two guineas per week. But possibly some of our readers may be able to help our correspondent.—ED. L.

THE LITERATURE OF BALNEOLOGY.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any of your readers can give me the titles of the most modern works on balneology with the names of the publishers and price. I do not want a very expensive book, but rather a clear and concise technical work as a therapeutical guide.

I am, Sirs, yours faithfully,
J. H.

May 18th, 1900.

*** The most complete work on the subject is "The Mineral Waters and Health Resorts of Europe," by Sir H. Weber and Dr. Parkes Weber, second edition, 1898, London, Smith, Elder, and Co.; but there are many books dealing with treatment at different springs and health resorts. Possibly the article on Hydro-therapeutics in vol. I. of "Allbutt's System of Medicine" would help our correspondent.

A QUERY.

To the Editors of THE LANCET.

SIRS,—Could you kindly recommend a small book on stammering and stuttering suitable to be given to parents of a child afflicted (aged about three years) to enable them partially to train the child at home?

I am, Sirs, yours faithfully,
A. B.

May 22nd, 1900.

*** Our correspondent might find the information which he requires in a small book called "Stammering: its Nature and Treatment," by Emil Behnke, published at 13, Earl's Court-square, London, S.W., price 1s.—ED. L.

"ACETYLENE LAMPS FOR BICYCLES."

To the Editors of THE LANCET.

SIRS,—Will you allow us to point out that the remarks in THE LANCET of May 19th upon acetylene are liable to be understood as applying not merely to bicycle lamps but to acetylene apparatus in general. Your criticisms upon self-contained lamps—i.e., lamps of which the generating chamber forms a part—are undoubtedly well founded, but they do not apply to proper systems as adopted for house and general lighting. We have put down installations for lighting villages and also some hundreds of separate country houses and your statement that you have not yet met with an apparatus which adapts this light satisfactorily on all sides for practical purposes is calculated to prejudice a rapidly increasing industry. We are glad to know that those who, for two or more years, have been using this gas as a general illuminant say just the reverse, and we should be only too glad to have the opportunity of demonstrating practically to you the efficiency of the system adopted for the generation and purification of the gas.

We are, Sirs, yours faithfully,
FOR THORN AND HODDLE ACETYLENE CO., LTD.,
J. F. PEASGOOD.

Westminster, May 21st, 1900.

*** We know of instances where such installations as above described have broken down or have proved unsatisfactory and have been finally abandoned. Two sources of trouble appear to be the choking of the burners and the blackening effect of the acetylene light upon ceilings and other surfaces.—ED. L.

"THE CASE OF THE LATE MR. ALFRED BOURNE."

To the Editors of THE LANCET.

SIRS,—Will you be good enough to acknowledge the following subscriptions which we have received in response to the appeal kindly published by you in THE LANCET of May 19th, p. 1467, on behalf of the widow and children of the late Mr. A. Bourne, surgeon, of Osmotherly.

We are, Sirs, yours faithfully,
J. A. HUTCHINSON.
WM. BAIGENT.

Zetland House, Northallerton, May 21st, 1900.

	£	s.	d.
Sir Thomas Smith, Bart.	5	0	0
Dr. George Murray (Newcastle).	2	2	0
Mr. Hughes H. Davies (Bow-road, E.)		10	6
Dr. W. Baigent (Northallerton)	2	2	0
Dr. J. A. Hutchinson, (Northallerton)	2	2	0
Mr. George Yeoman (Northallerton)	2	2	0
Dr. David Drummond (Newcastle-on-Tyne) ...	10	0	0
Miss May Yeoman (Northallerton)	2	2	0
Miss Scaife (Harrogate)...	2	2	0
Mr. H. Yeoman (Brompton)	2	0	0
Mr. H. A. Wilford (Brompton)	2	0	0
Mr. J. P. Yeoman (Brompton)	2	0	0
Mr. J. S. Yeoman (Darlington)	2	0	0
Mr. E. Gardner (Northallerton)	1	1	0
Mr. and Mrs. Charlton (Northallerton)	1	1	0
Mr. C. Tweedy (Northallerton)	1	1	0
Mr. J. Merryweather (Welbury)		10	0
Mr. W. Dobson (Osmotherley)		10	0
Mrs. Clark (Greenhills)		10	0

THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

IN the article upon this Congress from our Special Correspondent which appeared in THE LANCET of May 19th (p. 1462). Professor W. H. Corfield was inadvertently described as the secretary of the British Committee. Professor Corfield is the chairman, the hon. secretary being Dr. P. F. Moline.

M.B. Edin.—1. We think only one fee can be charged. 2. The position is a hard one. It is clear that a fee of £2 2s. was owing in the matter of the woman alone, and that the same fee was due in regard to the man. The £1 1s. for giving medical evidence in the man's case could be recovered in a court of law; but a legal claim for the £1 1s. due for making the second post-mortem examination might be resisted on the ground that only verbal instructions from a policeman were received by the medical man. We should like to know the name of the coroner in this case.

Dr. F. G. Haworth.—Apart altogether from the question of the quantity of water added the conclusions, it is obvious, may be based on the percentage of albumin, peptone, &c., in the dried solid matters of each preparation. For the purpose of arriving at the relative nutrient value we think this is the most satisfactory way of making a comparison, and the one we adopt. It may be remarked that beef-tea by its mode of preparation cannot contain any appreciable amount of albumin and peptone compared with the amounts contained in special preparations.

Mr. G. Gresswell.—We do not think that any general hospital would take such a case, but our correspondent might apply to the National Hospital for the Paralysed and Epileptic, Queen-square, London, W.C., an institution which assists incurable cases. He might also try the Meath Home, Godalming, or the National Society for the Employment of Epileptics, 12, Buckingham-street, Strand, W.C.

P. X.—Our correspondent is advised to consult his usual medical attendant.

During the week marked copies of the following newspapers have been received: *Surrey Comet, Westminster Budget, Scarborough Leader, Elgin Courant, Newcastle Daily Chronicle, Folkestone Express, Daily Messenger (Paris), Kentish Observer, Englishman (Calcutta), Blackburn Daily Telegraph, Norfolk Daily Standard, Daily Express (London), Herne Bay Argus, Western Mail (Cardiff), Hastings Times, East Anglian Daily Times, Liverpool Daily Post, Sheffield Daily Telegraph, Leeds Mercury, Times of India, Gazette (Middlesbrough), Pioneer Mail, Herald (Barrow-in-Furness), Birmingham Daily Poll, Dundee Advertiser, Cleckheaton Advertiser, Bradford Observer, Yorkshire Post, Citizen, Architect, Builder, Scotsman, Bristol Mercury, Oswestry Advertiser, Aberystwyth Observer, Cheltenham Examiner, Melbourne Age (N.S.W.), Hove Echo*

Sanitary Record, Mining Journal, Boston Independent, Westmorland Gazette, Hertfordshire Mercury, Local Government Chronicle, Reading Mercury, City Press, Burton Chronicle, Glamorgan Free Press, Manchester Guardian, East Essex and Halstead Times, Midlothian Journal, Torquay Times, Liverpool Journal of Commerce, Surrey Advertiser, Local Government Journal, Haverhill Echo, Glossop Times, Hereford Times, &c., &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 24th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp in Shade.	Min. Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
May 18	29·96	E.	...	71	58	46	48	53	Cloudy
" 19	30·07	N.W.	...	104	60	44	44	48	Cloudy
" 20	30·04	S.W.	...	111	67	43	49	51	Cloudy
" 21	29·94	S.W.	...	116	68	50	54	60	Cloudy
" 22	29·65	S.W.	0·09	68	58	55	55	57	Cloudy
" 23	29·61	S.W.	0·25	104	62	49	52	54	Raining
" 24	29·65	S.W.	0·29	77	56	49	51	54	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (29th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.)—8 P.M. Cases and Specimens will be shown by Dr. M. Fletcher, Dr. M. Fletcher and Mr. Waring, Dr. Smelk, Dr. Rolleston, Dr. Cautley, Mr. Edmunds, Dr. Saunders, Mr. Shattock, Dr. Fawcett, and Dr. Fawcett and Dr. Hale White. 9.30 P.M. Annual General Meeting for Election of Officers, Report of Council, &c.

WEDNESDAY (30th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—6 P.M. Ordinary Meeting. Election of Officers and Council for the Session commencing October, 1900, at General Meeting following. 7 P.M. Annual Dinner at Limmer's Hotel, Conduit-street, W. 9 P.M. Annual Conversazione at 20, Hanover-square. Sir Joseph Fayrer, Bart.: The Hill Stations of India as Health Resorts.

FRIDAY (1st).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—Clinical Meeting. Specimens and Cases:—Mr. G. Pernet: Sections of Leprous Nodules, showing the Bacilli.—Mr. S. Paget: Case of Retroperitoneal Abscess.—Mr. Bidwell: Case of Arthrectomy of Elbow.—Mr. McAdam Eccles: Cases illustrating Swellings upon Digits.—Dr. Ball and Dr. Abraham: A Case of Tuberculous Disease of the Skin and Mucous Membranes.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Mr. Butlin, Mr. Lake, Mr. W. Downie, Mr. Lack, Mr. Parker, Mr. Steward, and Mr. Waggett.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. F. Potter: Examination of the Ear. (Post-Graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. J. B. Ball: Throat and Nose Cases.

TUESDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Dr. J. Taylor: Cerebral Diplegia.

WEDNESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. Broadbent: Consultation. (Medical.) 5-7 P.M. Dr. W. Jobson Horne: Class. Practical Rhinology and Laryngology. Demonstration III.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. F. Willcocks: Clinical Demonstration of Medical Cases. (Post-graduate Course.)

THURSDAY (31st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Surgical Cases. (Post-graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Still: Meningitis in Children.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. J. B. Ball: Throat and Ear Cases.

FRIDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Tilley: Consultation. (Throat.)

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